

Manufacturers Record

Industry Pat. Office Construction



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Baltimore, Md.
MAY 14, 1931

Industry Must Have a Profit

Our recent expression in this place on "Price Cutting" has prompted a great deal of favorable comment. Industry is becoming aroused to the necessity of doing something about a course that could be ignored if it hurt only the one following it, but its harmful effect is far reaching. Reducing production costs to sell at a lower price is sound business; to slash prices to a point very evidently below the cost of production is exactly the opposite. Cut-throat competition is detrimental to an entire trade. It undermines confidence and will increase unemployment. The question of enabling producers to protect themselves against ruinous competition demands prompt and effective consideration.

The slashing of prices in the cement industry is an indication of how far things may go in the wrong direction.

The following is received from a Southern textile manufacturer:

"The front cover editorial, 'Price Cutting,' of your April 16 issue is worthy of great appreciation in all lines of industry.

"In the textile industry, price cutting seems to have almost reached perfection, and from competitive prices reaching my attention from day to day it appears that mill managers must be enjoying this orgy of price cutting as a real sport. Apparently they want to get into bankruptcy as quickly as possible.

"We need a complete change of mind and attitude in business affairs, and determination by sales managers everywhere not to sell their product below cost. It is certain that as long as this policy is continued no sales can be made at a profit.

"We certainly do need a change in the Federal anti-trust laws that will enable industry to regulate production and put prices on a profitable basis. It is my belief that in interstate shipments the Federal government should, if necessary, absolutely repeal the present anti-trust laws, in order to enable industries to cooperate to mutual advantage by discontinuing the selling of commodities below cost. This is certainly no time for government anti-trust interference with any branch of industry that is trying to cooperate within their own ranks to secure prices on commodities that will keep them from bankruptcy. If industry is not willing to do this voluntarily, the situation is so critical that perhaps it may be necessary for government legislation to protect industry from self-destruction."

Emphatically Approved!



INDUSTRIAL

Deere & Company	Mesta Machine Company
Buffalo General Electric Co.	Proctor & Gamble
Byllesby Utilities	Standard Oil
General Motors	Crown Cork & Seal
American Steel & Wire Co.	Crane Company
Dow Chemical	American Can
Inland Steel	Westvaco Chlorine Products
Insull Utilities	Universal Atlas Cement
Bendix Aviation	National Biscuit Company
Kimberly-Clark	Palmer Steel Company

RAILROADS

Chicago, Milwaukee & St. Paul	Fort Worth & Denver City
Norfolk & Western R. R.	Chicago & Western Indiana
Rock Island Railroad	South Shore Lines, Chicago
Baltimore & Ohio R. R.	Milwaukee Electric
Burlington Railroad	Chicago Rapid Transit Co.
Grand Trunk Railroad	Indiana Railroad
Northwestern Railroad	

PUBLIC

124th Field Artillery Armory, Chicago
 Birmingham, Ala., Airport Terminal Bldg.
 Illinois Naval Armory, Chicago
 Detroit Municipal Hangar
 Wayne County, Michigan Hangar
 Adler Planetarium, Chicago
 Peoples-Pittsburgh Trust Company
 Alexander Gymnasium, Appleton, Wis.
 Shreveport, La., Auditorium
 Flint, Michigan, Auditorium
 Paramount Theatres
 Joslyn Memorial, Omaha
 University of Chicago Buildings
 St. Aloysius Church, Detroit
 University of Texas, Austin, Texas
 Illinois State Reformatory Buildings
 DeVilbiss High School, Toledo, Ohio
 Lane Technical School, Chicago
 Forest Hills Drive School, Syracuse
 Light Horse Squadron Armory, Milwaukee

THE light weight precast concrete roof-deck has proven its case—convincingly.

Savings in structural steel—savings in painting, repairs, replacements—savings in fire loss and insurance—present their evidence from records of actual *experience*.

The list at the left is but a small cross-section of Featherweight users, typical of the kind of approval accorded this modern roof-deck through architects, engineers, contractors and owners.

Featherweight Concrete INSULATING ROOF SLABS

are made of *Haydite* aggregate used instead of sand to provide the trapped air cells for light weight and insulating value. They weigh as low as 10 lbs. per sq. ft.—go on the same light steel frame that carries other roofs.

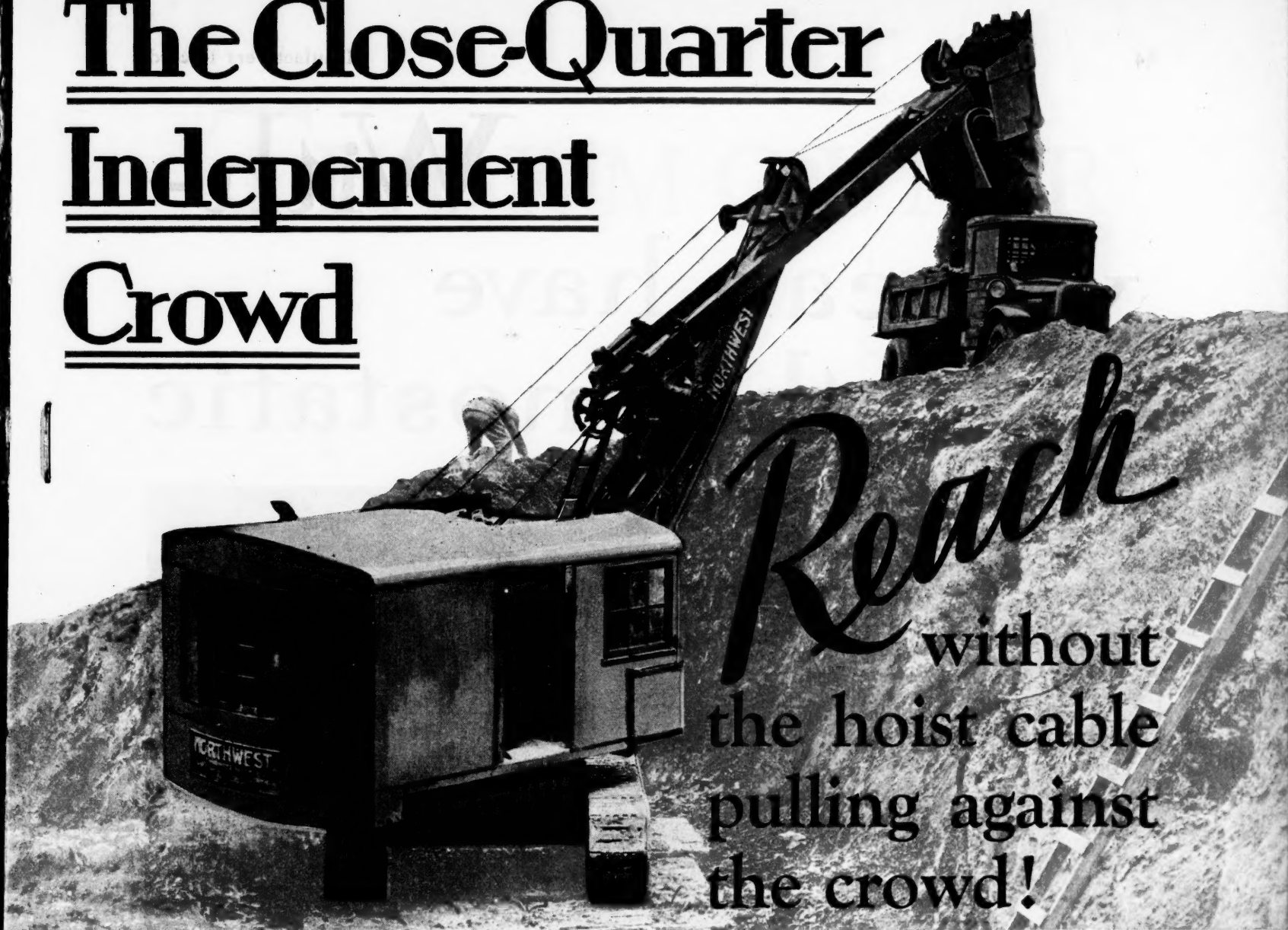
This advanced construction is described and illustrated in our "Catalog and Roof Standards", available on request.

Made, Laid and Guaranteed by

FEDERAL-AMERICAN CEMENT TILE CO.

Executive Offices: 608 South Dearborn Street Chicago
 Plants near CHICAGO . NEW YORK . PITTSBURGH . BIRMINGHAM
FOR OVER A QUARTER CENTURY

The Close-Quarter Independent Crowd



Reach
without
the hoist cable
pulling against
the crowd!



Z-Z-Z-ZING—out go the sticks in a single operation!

There is no fighting between hoist and crowd —no juggling of levers and mechanisms to keep the dipper up—just a fast, smooth maneuver that spots the dipper accurately and assures a speedy return for another load.

And because the Northwest Close-Quarter Independent Crowd does not split the engine power between crowding and hoisting, it handles 25% harder digging.

These things mean pay dirt! Ask about them!

NORTHWEST ENGINEERING CO.
1733 Steger Bldg., 28 E. Jackson Blvd., Chicago, Ill., U. S. A.

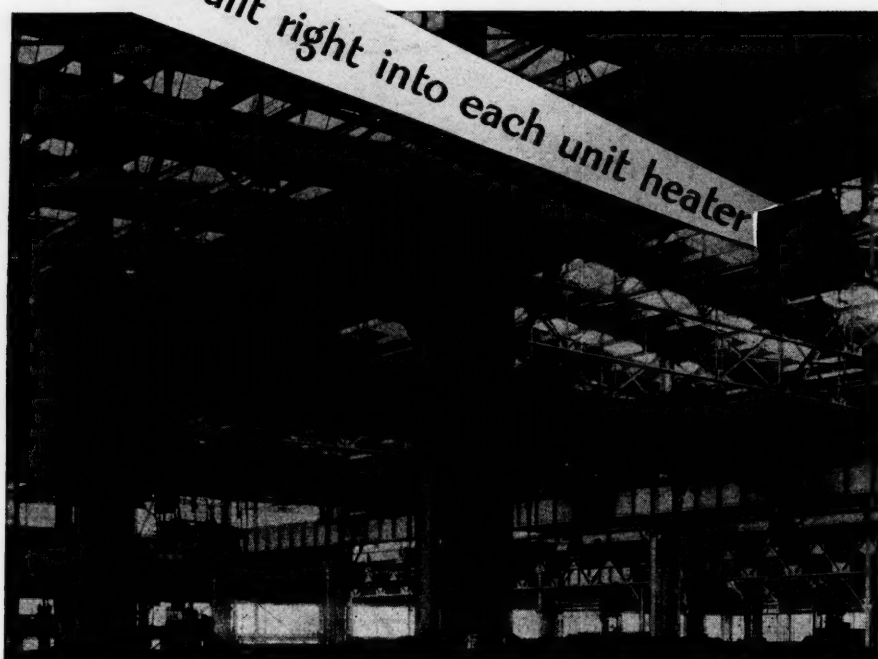
Atlanta, Ga.: 351 Whitehall Street • Memphis, Tenn.: Second at Butler
Dallas, Texas: 1221 S. Lamar Street • St. Louis: 1325 Macklind Avenue
New Orleans, La.: 816 Howard Ave. • Baltimore, Md.: 15 W. Franklin St.



NORTHWEST

With- you can have thermostatic

*"Heat with
Unit Heaters"*



IF IT were practical to install unit heaters with a cooling leg pipe 150 feet long, thermostatic traps could be used on every unit heater.

Thermostatic traps are fitted directly into the return outlet of Thermolier because Thermolier has the equivalent of a cooling leg 150 feet long *built right into the unit*, an exclusive Thermolier feature.

Yet the built-in cooling leg is only *one* of 14 Points of Superiority.

"Thermolier has changed the whole picture of unit heating," writes a leading engineer. "Everywhere I get the same opinion, that the Grinnell developments are revolutionary."

THERMOLIER

traps



Made in eight models to fit any space and every condition. All Thermoliers in the installation illustrated here are equipped with Grinnell Adjustable Velocity Nozzles.



Many thousands of Thermoliers in use

Single units have been used to correct bad heating conditions in isolated sections of plants,—shipping platforms and the like. Sections of obsolete heating equipments have been thoroughly modernized by the use of only a few units.

Whole plants using, in many instances, hundreds of Thermoliers are being successfully heated.

GRINNELL COMPANY INC.

Executive Offices: Providence, R. I.
Branches in all Principal Cities

14 Points of Superiority

GRINNELL COMPANY, INC.
318 West Exchange Street, Providence, R. I.

We are interested in learning more about the internal cooling leg of Thermoliers. Send us detailed explanation and diagram.

Name

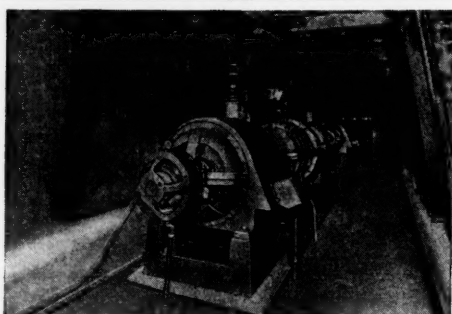
Firm

Address

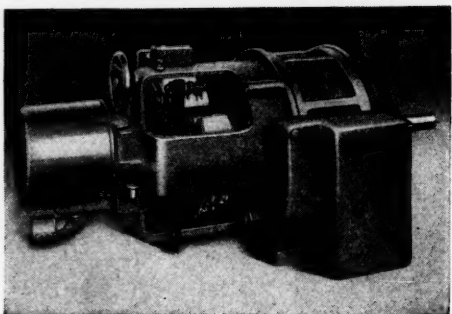
Have You Somewhat
Do It
[The Sayings of



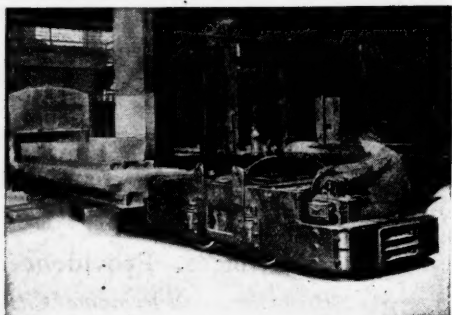
To Do To-morrow,
To-day
Poor Richard]



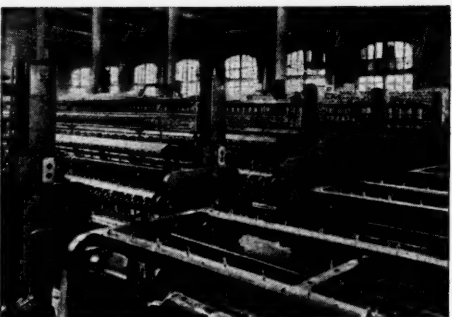
Pump drives might well receive early consideration in your modernization program. Pumps, as a rule, run continuously, and any improvement in the power-factor and efficiency of the drives quickly results in appreciable savings. Modern synchronous motors, with their high efficiency, high power-factor, and adaptability for direct drive, are ideally suited for pump operation—in fact, for an ever increasing number and variety of machines.



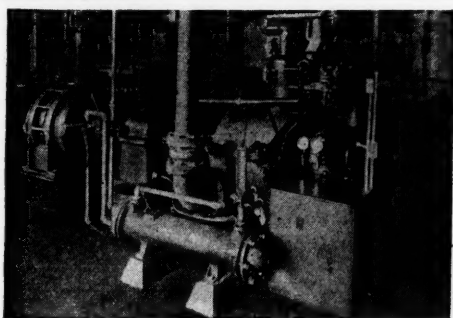
The Type BTA motor—made exclusively by General Electric—may be just what you're looking for in your modernization plans. It is an a-c. adjustable-speed motor with such desirable d-c. features as (1) wide speed range, (2) shunt characteristics—practically no change in speed from no load to full load—and (3) high efficiency. It is finding wide applications for driving textile finishing machinery, cement and lime kilns, bakery machinery, stokers, boiler-house fans, oil-refining machinery, small paper machines, etc.—where d-c. advantages are desired without the necessity of investing in d-c. conversion apparatus.



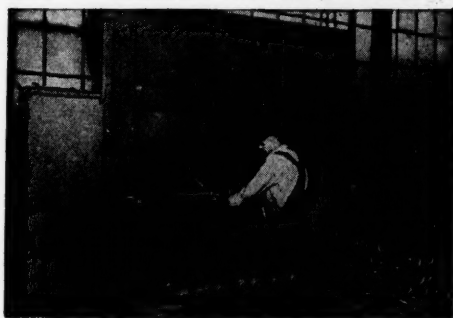
Have you checked up on your interplant haulage? There is a fertile field for modernization in the use of G-E electric industrial locomotives. First cost can be written off at a very low annual figure, and you can take a generous slice off your maintenance budget. These convenient, compact, electric workers are always ready to go at the turn of a handle; there are no standby losses; only one semiskilled operator is required; they are available in the storage-battery type, trolley type, or in a combination of both.



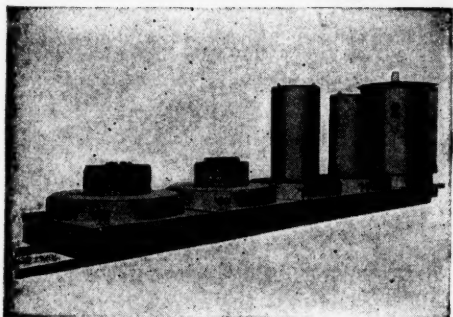
Control should receive foremost consideration in your modernization plans because of the greater productiveness, economy, convenience, and safety offered by modern controllers. Here is a textile mill, for example, that has modernized by installing the new G-E combination magnetic motor-starting switches which contain a hand-operated motor-circuit switch, a magnetic motor-starting switch, test jack, and fuses—all under one cover. This mill has gone a step further by installing G-E time-delay, push-button stations, which, according to operating records, are preventing 96 per cent of the shutdowns formerly caused by momentary voltage dips.



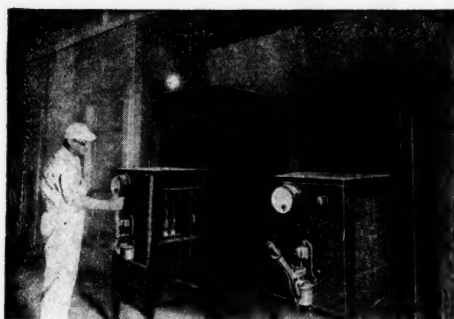
Manufacturers who operate continuous processes and use process steam will be interested in a new General Electric development that keeps the plant operating even though the outside power supply fails because of lightning or other disturbances. It is a dual-drive conversion and process-steam unit consisting of a synchronous motor and a d-c. generator operating under a balanced load condition with a mechanical-drive turbine. When power from the outside line is removed from the synchronous motor, an instantaneously operated automatic device switches the entire load to the turbine until outside service is resumed. The illustration shows such a unit in a paper mill located in a mountainous region.



Step No. 1 in modernizing the manufacture of most metal products is the redesign of those products to adapt them for arc-welded fabrication from standard shapes and plates. Step No. 2 is the purchase of hand-operated welding sets. Step No. 3 is the purchase of multiple-operator sets, i.e., sets from which a number of operators can work simultaneously. Step No. 4, perhaps, is the adoption of automatic arc welders for the rapid fabrication of standardized parts used in the assembly. In every step of this program, General Electric can help you with application-engineering advice, free sample work, free training of your operators in its welding school, and with a complete line of arc-welding equipment and electrodes.



Modernization economies mount up to big figures when G-E hood-type annealing furnaces, with controlled atmospheres, are installed for the "bright-annealing" of cold-rolled strip and wire. The brighter and more uniform anneals, the reduction in handling charges, the elimination of pickling and cleaning operations, and the greater speed and convenience resulting from the use of these furnaces effect economies in factory costs and selling costs that cannot be ignored by any progressive manufacturer.



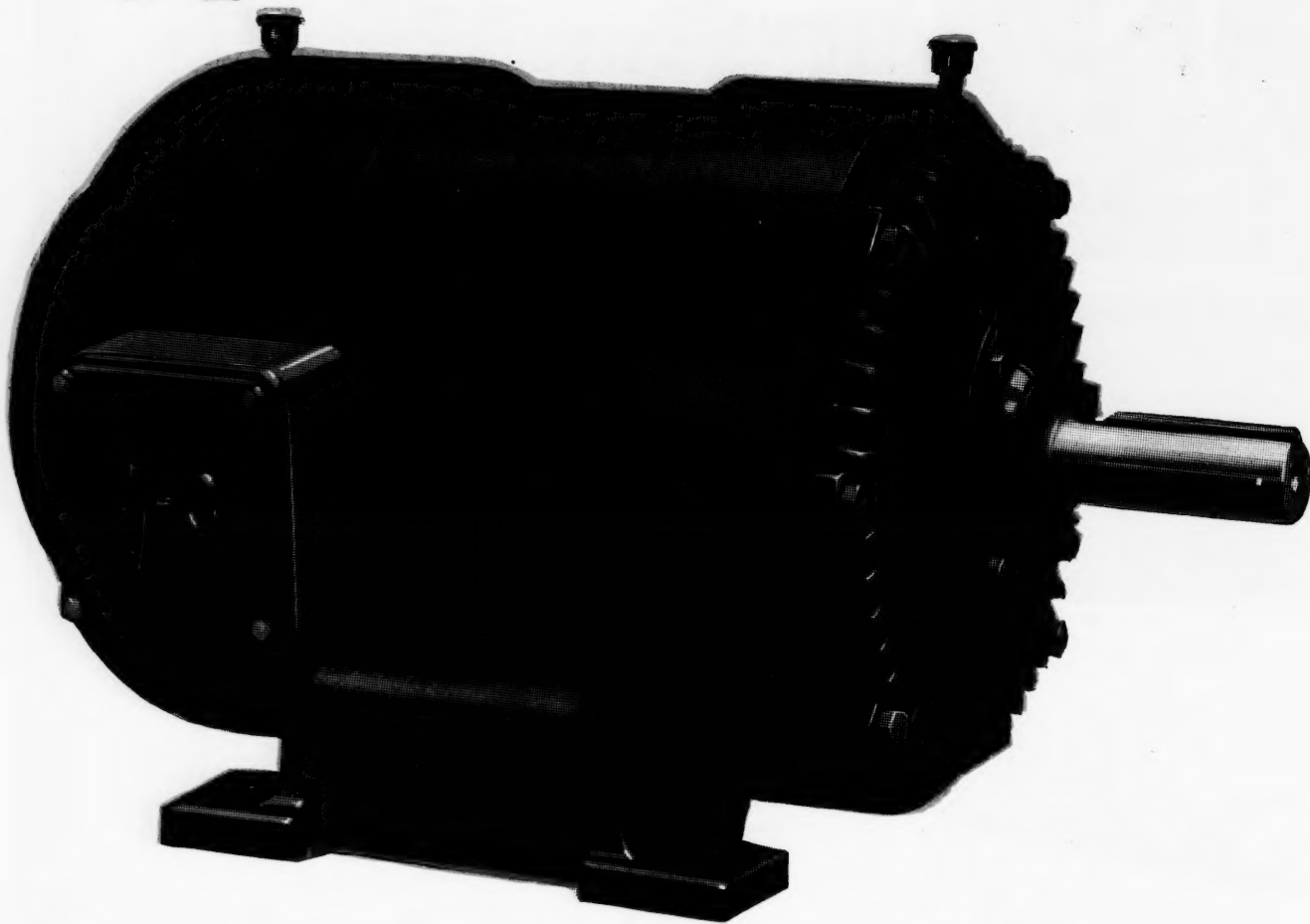
When these two capacitors were installed in a mid-western flour mill upon the recommendation of a G-E salesman, the mill power-factor rose from 85 per cent to unity. The power contract granted a one-per-cent reduction of the total power bill for each per cent power-factor improvement above 85 per cent. The total power bill was reduced by 15 per cent—a saving of \$359 per month, or \$4308 per year. In addition, the electrical service was improved because of the better voltage regulation resulting. Whether you buy your power or generate it, capacitors offer exceptional opportunities for plant modernization.

Modernization Reduces Costs—Increases Profit

There are any number of ways in which the G-E sales engineer can help you to modernize. Ask him about them when he calls; or write the nearest G-E office.



Approved—



Explosion Proof Motor



Allis-Chalmers explosion-proof motors are painted red to distinguish from the ordinary totally enclosed types.

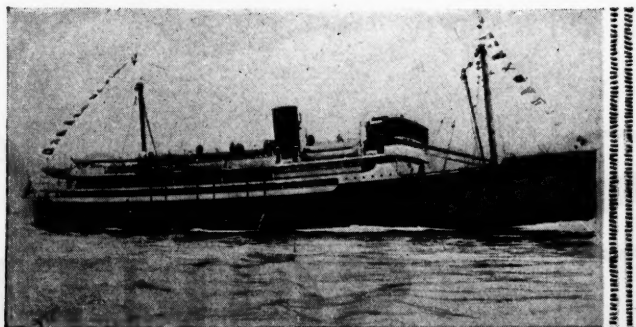
Allis-Chalmers Manufacturing Company takes pleasure in announcing approval, by the Underwriters' Laboratories, of its line of explosion-proof motors. These have been tested and approved for Class 1, Group D Locations, Gasoline (Pyroxylin Lacquer Vapor) and each motor carries the Underwriters' label for this service.

With more than four years of experience in the manufacture of the compact and efficient, enclosed, fan-cooled motor, a design was developed for the Allis-Chalmers explosion-proof motor which is not encumbered with excess weight, bulkiness, and without sacrifice of accessibility.

Send for descriptive leaflet 2125.

ALLIS-CHALMERS

— Allis-Chalmers Manufacturing Company, Milwaukee —



*One vessel of a large fleet
equipped with Westinghouse Compressor*



AIR COMPRESSORS

for Marine Service

WESTINGHOUSE-NATIONAL air compressors are used extensively in Marine Service—on yachts and motor boats to blow alarm whistles—on motor ships to start Diesel engines—on pile drivers, wrecking barges, etc., to operate wood-borers, saws, etc.—in lighthouses to furnish air for fog signals—in ship yards to operate pneumatic tools—and on steamships to supply air for cleaning boiler flues and machinery, and for *operating scaling hammers and paint sprayers.*

This latter use is of major importance. Formerly rust and scale were removed from the plates of a steel vessel by hand chippers and paint applied with a brush. The modern method—by compressed air—is quicker and better. Hundreds of air compressors have been applied to vessels for this purpose by

leading steamship companies, including the newly formed Baltimore Mail Steamship Company, the Atlantic Steamship Line, the Consolidation Navigation Company, the Merchants and Miners Transportation Company, and other lines operating from Gulf ports.

The compressor used almost universally for this purpose is the Westinghouse steam driven type, the same as used on locomotives to supply air for brake operation. This machine is efficient, sturdy and reliable. It is compact and occupies no valuable floor space as it can be readily attached to a column or bulkhead . . . Every sea-going and coast-wise vessel should have one or more of these air compressors!

WESTINGHOUSE TRACTION BRAKE CO.
Industrial Division - - Pittsburgh, Pa.

WESTINGHOUSE—NATIONAL

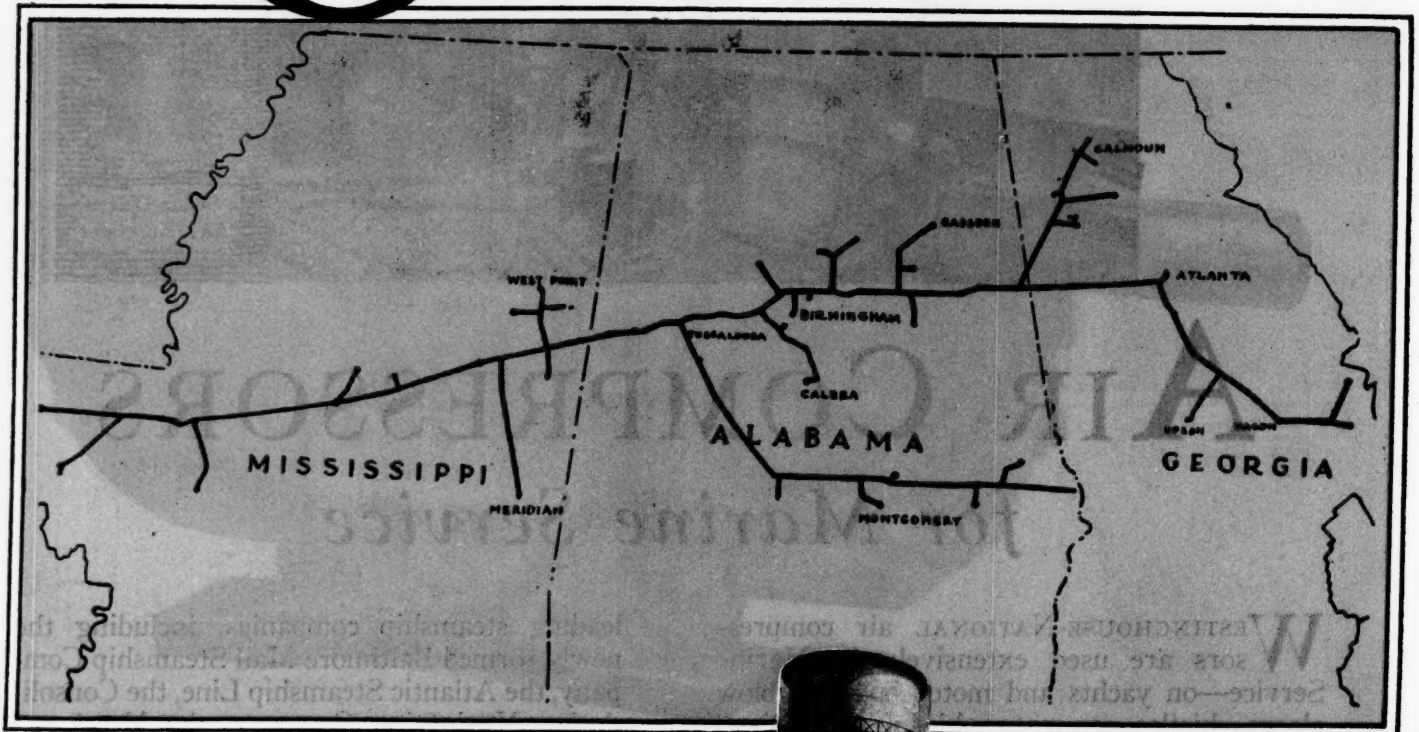


Air Compressors



“Quality Machines for Quality Service”

Natural **GAS** *comes to* **SOUTH**



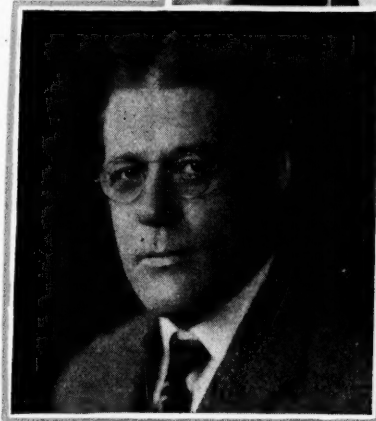
EASTERN STATES!

Pipe lines totaling some 1200 miles in length are now bringing natural gas from Monroe and Richland fields in Louisiana to communities in Mississippi, Alabama, and Georgia.

This tremendous development, at an initial expenditure of over thirty-six million dollars, marks a new era of development and progress for the South. Already many industrial plants are using this fuel. A series of advertisements to follow will illustrate and describe many of these interesting installations.

At the left is shown a map of the main pipe line and its branches. Below are pictures of the pipe line construction (a feat of romance in many respects) and exterior and interior photographs of the "booster" station at Reform, Ala., one of the several points where the pressure on the gas is renewed and it is sent on its way again. At the right are some of the officials of the Southern Natural Gas Corporation, who did it; top, J. H. White, President; middle, H. B. Pearson, General-Superintendent; bottom, P. McDonald Biddison, Consulting Engineer.

Write for information on how this modern fuel can be used in your plant or your home to your own profit, comfort and convenience.



SOUTHERN NATURAL GAS

C O R P O R A T I O N

WATTS BUILDING
BIRMINGHAM, ALA



WHERE RESISTANCE TO RUST IS A FACTOR

Specify **TENNESSEE
KEYSTONE COPPER
STEEL SHEETS**



BLUE ANNEALED
BLACK
GALVANIZED
ROOFING
SIDING
DRUM STOCK
and
SPECIAL FINISHES

Experienced buyers of sheets are rapidly learning that they can obtain superior corrosion resistance by demanding copper steel. Their judgement in this respect is amply backed by exhaustive tests conducted by unbiased, scientific, fact-finding technical authorities under diversified weather conditions.

Modern manufacturing methods, careful inspection at every stage, heavy stocks available for quick shipment—all backed by the integrity of the manufacturer—are good reasons for standardizing on this brand. *Let us quote you.*

TENNESSEE COAL, IRON & RAILROAD COMPANY

General Offices: Brown-Marx Building, Birmingham, Ala.

Subsidiary of United States Steel Corporation

AMERICAN BRIDGE COMPANY
AMERICAN SHEET AND TIN PLATE COMPANY
AMERICAN STEEL AND WIRE COMPANY
CARNEGIE STEEL COMPANY

PRINCIPAL SUBSIDIARY
COLUMBIA STEEL COMPANY
CYCLONE FENCE COMPANY
FEDERAL SHIPBUILDING AND DRY DOCK COMPANY

MANUFACTURING COMPANIES
ILLINOIS STEEL COMPANY
MINNESOTA STEEL COMPANY
NATIONAL TUBE COMPANY

OIL WELL SUPPLY COMPANY
THE LORAIN STEEL COMPANY
TENNESSEE COAL, IRON & R. R. COMPANY
UNIVERSAL ATLAS CEMENT COMPANY

Pacific Coast Distributors—Columbia Steel Company, Russ Building, San Francisco, Calif.

Export Distributors—United States Steel Products Company, 30 Church Street, New York, N. Y.

HERE IT IS!

THE MODEL 500

A NEW P & H ONE-YARD SHOVEL & CRANE AT A NEW LOW PRICE

A SURE WAY TO GREATER YARDAGE AT LOWER COST

BRANCH OFFICES

Atlanta Baltimore
Birmingham Dallas
Jacksonville Kansas City
Memphis St. Louis

WAREHOUSES AND SERVICE STATIONS

Dallas Jacksonville
Memphis

AGENTS

Albuquerque, N. M., R. L.
Harrison Co., 123 No. 4th
St.

Atlanta, Ga., Vancey Bros.,
634 Whitman St., S. W.

Houston, Tex., R. S. Ever-
ett & Co., 3112-4 Harris-
burg Blvd.

Jacksonville, Fla., Bergman
Tractor-Equip. Co., 8 My-
erside Viaduct.

Miami, Fla., McDonald
Tractor-Equip. Co., 2150
N. W., 1st Court.

New Orleans, La., So. States
Equip. Co., 1519 Tchoup-
salas Street, Bank Bldg.

St. Louis, Mo., Hennessy-
Farrar & Co., 1115
Boatman's Bank Building.

This is real news for every user of a one-yard shovel, crane, or dragline. For P & H has never offered before an excavator with so many quality features at a price so reasonable.

The new 500 embodies those construction and operating features which have made the P & H line famous: Unit cast steel frames, chain crowd, drums in tandem, alloy steel wearing parts, power clutch, husky power plant, ease of control, and a score of others.

And it's fast: 110 feet per minute dragline speed, 155 feet per minute clamshell speed, four revolutions per minute swing speed, $\frac{3}{8}$ or $\frac{3}{4}$ mile per hour travel speed, or both. Plus the rapid positive crowding motion made possible by the P & H patented chain crowd.

Write us today for complete data and for the new low price on the new 500.

HARNISCHFEGER CORPORATION
Established in 1884
4427 West National Ave., Milwaukee, Wis.



27 STANDARD MODELS

\$ 6,500.00 TO \$ 65,000.00

SHOVELS — DRAGLINES — CRANES SKIMMER SCOOPS — TRENCH HOES

FULL REVOLVING MODELS $\frac{3}{8}$ TO $3\frac{1}{2}$ CUBIC YARDS CAPACITY

ARMCO

ACHIEVEMENT

FOUR GREAT CONTINUOUS MILLS

*Ready to Serve Your
Every requirement*

MORE than a decade ago, Armco foresaw the need for tremendous tonnages of sheets and plates that would meet increasingly stricter specifications; tonnages that the hand-operated mills could never hope to supply. And so its engineers set out to develop a rolling process that would deliver true-gaged, clean-surfaced sheets in undreamed-of quantities.

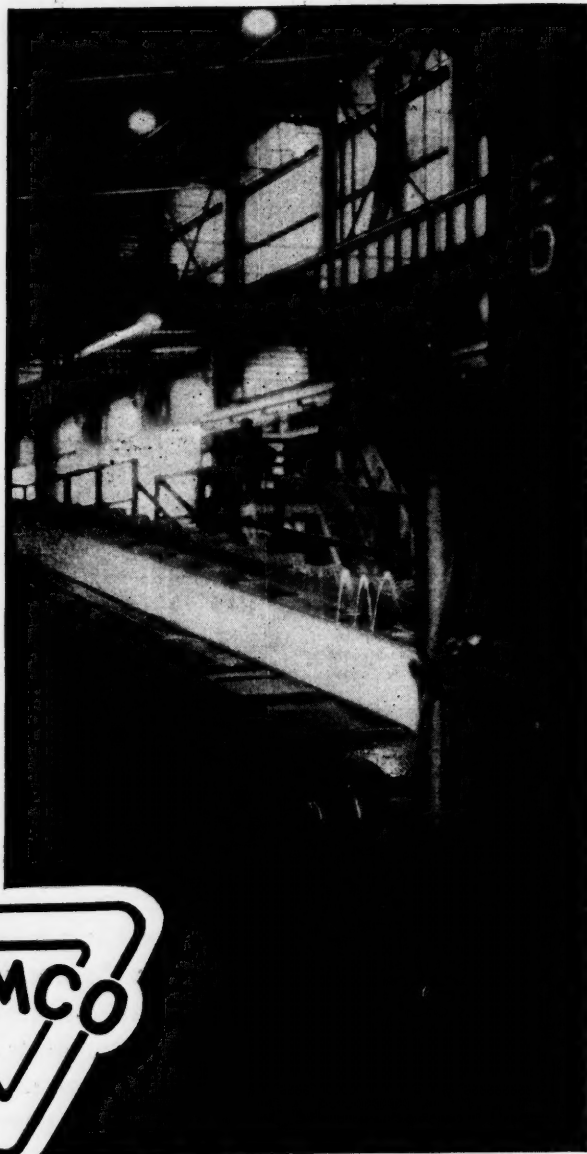
And now, every Armco Division is equipped for continuous mill production. These modern mills coupled with advanced research and metallurgical facilities can be made an important part of your business. We shall be glad to show you how.

THE AMERICAN ROLLING MILL COMPANY

Executive Offices, Middletown, Ohio
Export: The Armco International Corp.

DISTRICT OFFICES

Chicago — Cincinnati — Cleveland — Detroit
New York — Philadelphia — Pittsburgh
St. Louis — San Francisco



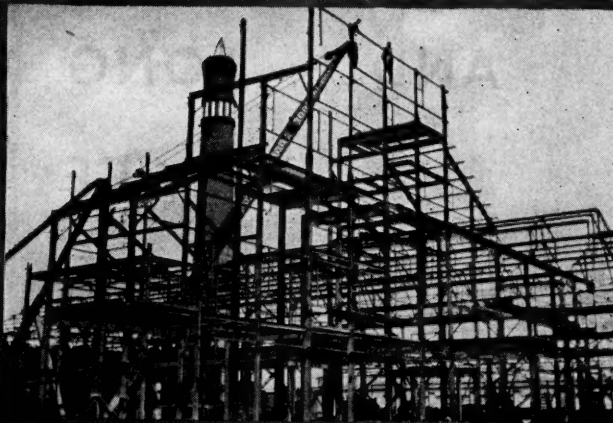
PRODUCTS OF ARMCO'S CONTINUOUS MILLS

ALLOY COATED SHEETS
AUTO BODY & FENDER
SHEETS
BARREL STEEL
BLACK SHEETS
BLUE ANNEALED SHEETS
AND PLATES
CORRUGATED SHEETS

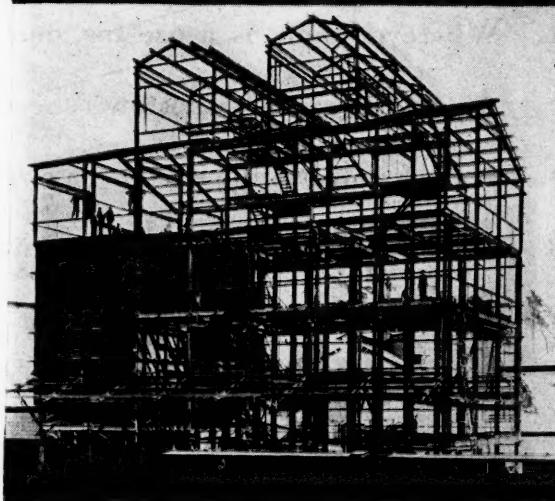
DRAWING AND SPINNING
SHEETS
ENAMELING SHEETS
ELECTRICAL SHEETS
FURNITURE SHEETS
GALVANIZED SHEETS
JAPANNING SHEETS
LONG TERNE

MILK CAN SHEETS
PICKLED SHEETS
PLATES—IRON & STEEL
POLISHED SHEETS
SPECIAL FINISH STEEL
STRIP, HOT AND COLD
ROLLED
SPIRAL WELDED PIPE

Sugar Factory, Brazil
The Dyer Co., Cleveland, O.
Engineers and Builders



Attapulugus Clay Co. Plant
Attapulugus, Ga.

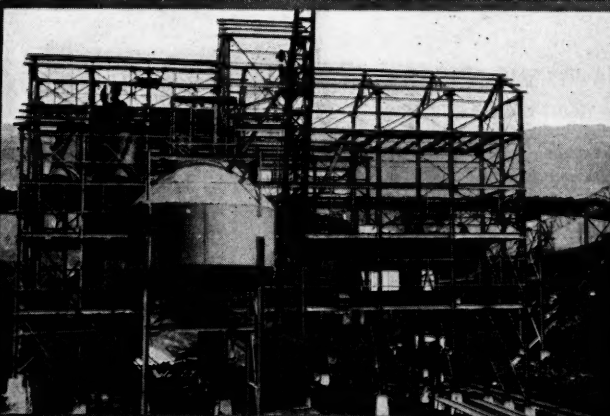


STEELING PRODUCTION

The Competent Steel Builder can give you all the advantages of steel, known dependable strength and economy of space, plus a carefully co-ordinated fabrication and erection schedule best suited to your construction program.

(On this page four of our recent jobs)

Coal Preparation Plant and
Tipple, United Pocahontas
Coal Co., Crumpler, W. Va.



Chicago Bridge & Iron Co. Plant
Birmingham, Ala.



VIRGINIA BRIDGE & IRON CO.

ROANOKE BIRMINGHAM MEMPHIS ATLANTA

NEW YORK NEW ORLEANS LOS ANGELES

CHARLOTTE DALLAS EL PASO

VIRGINIA BRIDGE

FOR EASY FABRICATION AND . . . LONG SERVICE

IN THE FABRICATION of any sheet steel product, or in any type of sheet installation, the working qualities of Youngstown sheets actually reduce fabricating costs . . . and at the same time assure a better finished product.



This is readily apparent in every

fabricating operation . . . in cutting, stamping, drawing, seaming, beading, forming, pressing and welding . . . while the uniform, high quality of the sheets is reflected in longer service even under the most adverse conditions.

Wherever there is a use for steel sheets, there is a Youngstown sheet exactly suited to the need . . . a size and type for every requirement.

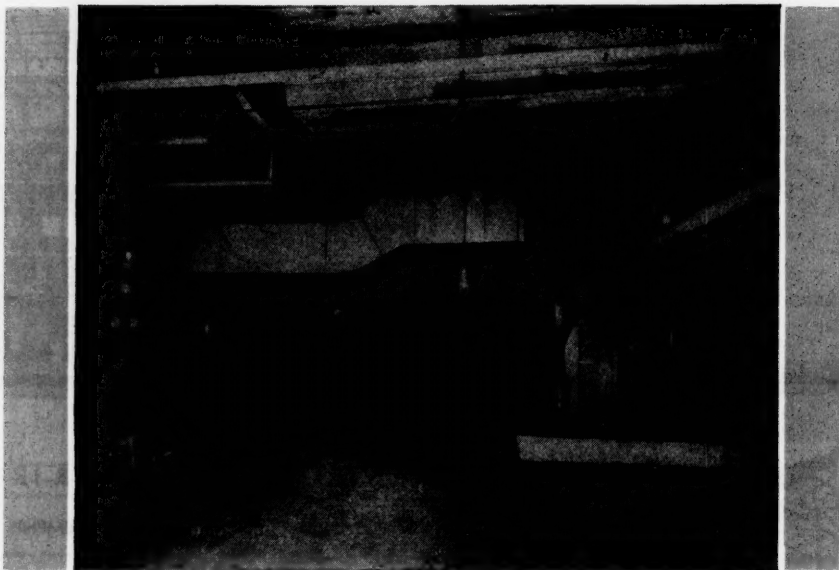
THE YOUNGSTOWN SHEET AND TUBE COMPANY

One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid".

General Offices: YOUNGSTOWN, OHIO

DISTRICT SALES OFFICES:

ATLANTA . . . Healey Building
BOSTON Chamber of
Commerce Building
BUFFALO . Liberty Bank Bldg.
CHICAGO . . . Conway Building
CINCINNATI . . . Union Trust
Building
CLEVELAND . Terminal Tower
Building
DALLAS . . . Magnolia Building
DENVER . Continental Oil Bldg.
DETROIT . . . Fisher Building
KANSAS CITY, MO. . . Com-
merce Building
LOS ANGELES . 3000 Santa Fe
Avenue
MEMPHIS . . . 42 Keel Avenue
MINNEAPOLIS . Andrus Bldg.
NEW ORLEANS . . . Hibernia
Building
NEW YORK . 30 Church Street
Hudson Terminal Building
PHILADELPHIA . . . Franklin
Trust Building
PITTSBURGH . . . Oliver Bldg.
SAN FRANCISCO . . . 55 New
Montgomery Street
SEATTLE . . . Central Building
ST. LOUIS . . . Louderman Bldg.
YOUNGSTOWN . Stambaugh
Building
LONDON
REPRESENTATIVE:
The Youngstown Steel Products
Company, Dashwood House, Old
Broad Street, London, E. C. Eng.

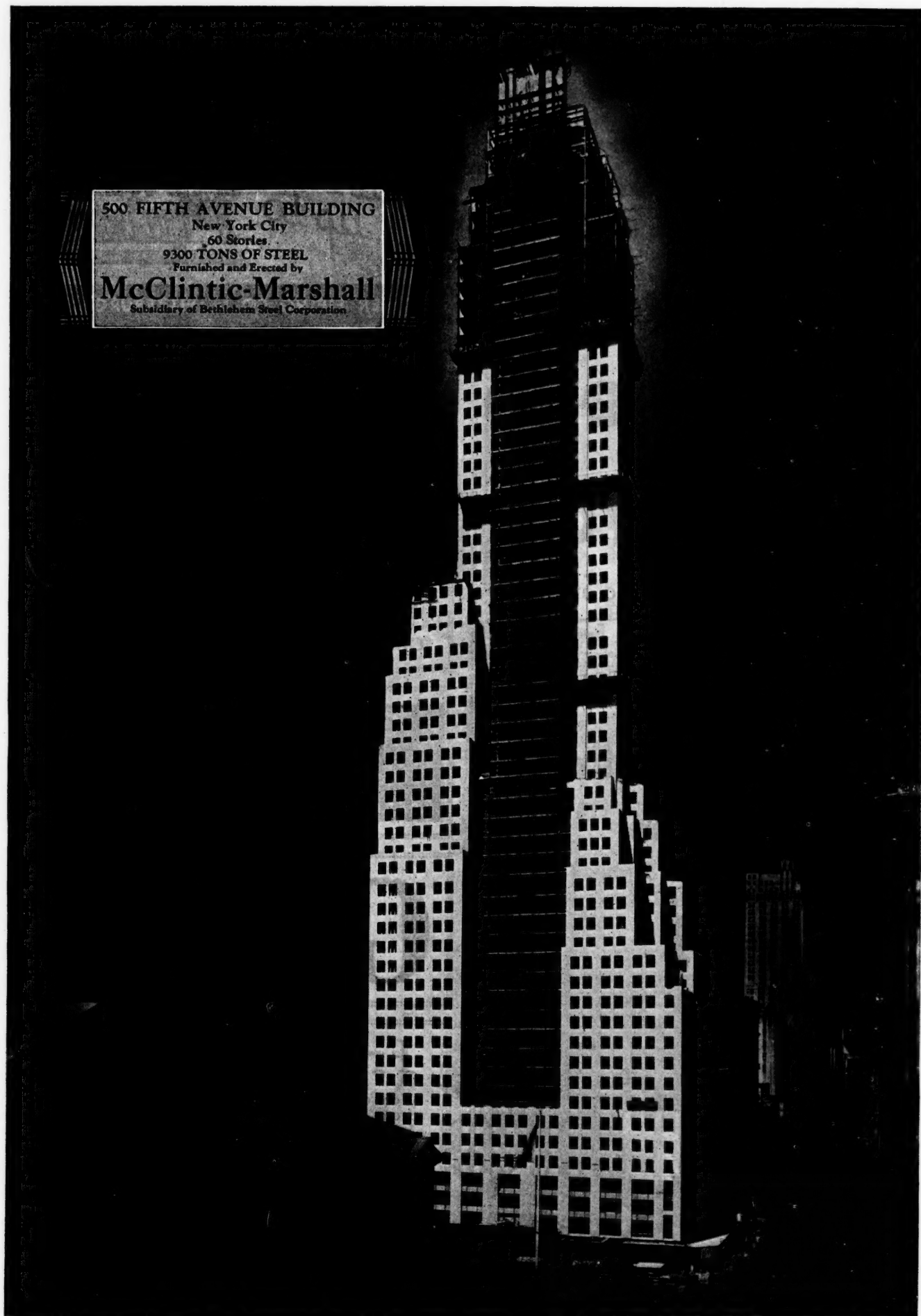


In Severance Hall, the beautiful new home of the Cleveland Symphony Orchestra, Youngstown Copperoid Galvanized steel sheets were used throughout the entire air conditioning system, because of their extraordinary resistance to corrosion.

Sheet Metal Contractor: MANNEN & ROTH CO.

GALVANIZED SHEETS PROTECT • SAVE WITH STEEL

YOUNGSTOWN



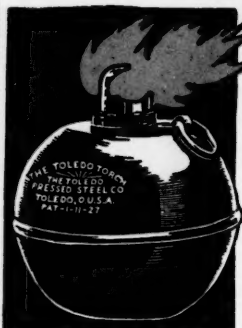
500 FIFTH AVENUE BUILDING
New York City
60 Stories
9300 TONS OF STEEL
Furnished and Erected by
McClintic-Marshall
Subsidiary of Bethlehem Steel Corporation

Architects: SHREVE, LAMB AND HARMON, NEW YORK CITY Engineer: H. G. BALCOM, NEW YORK CITY
General Contractor: CHARLES T. WILLS, INC., NEW YORK CITY

Durability

The Toledo Torch is built to last a long time. Rigidly built of steel throughout, it's unbreakable, leakproof and good for long, continuous service.

Order from your dealer—
insist on the genuine Toledo



Toledo Torch



The Toledo Pressed Steel Co.
TOLEDO OHIO

Save with Steel

Manufacturers of The Toledo Horse—the ideal highway barricade

INDUSTRIAL PIPING

put it
up to

Power Piping
FOR EVERY INDUSTRIAL NEED

POWER PIPING CO. * PITTSBURGH, PA.

SEWER PIPE
CULVERT PIPE
METER BOXES
WALL COPING
DRAIN TILE



FLUE LINING
FIRE BRICK
FIRE CLAY
GRATE BACKS
SEPTIC TANKS

This stamp on Clay Products carries the same guarantee of quality as Sterling on silver.

We solicit your inquiries

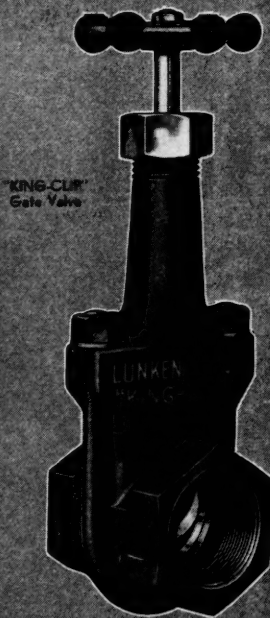
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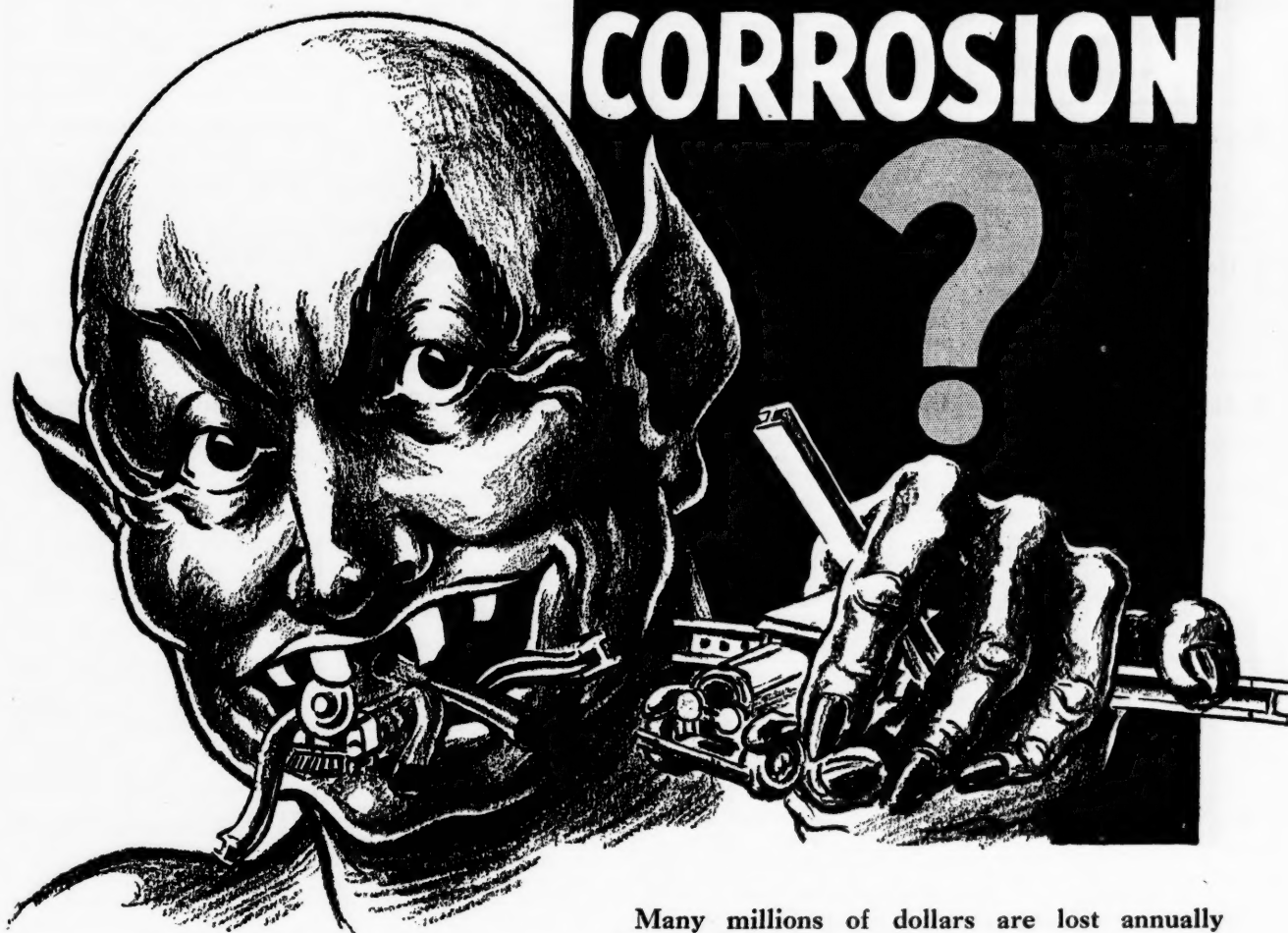
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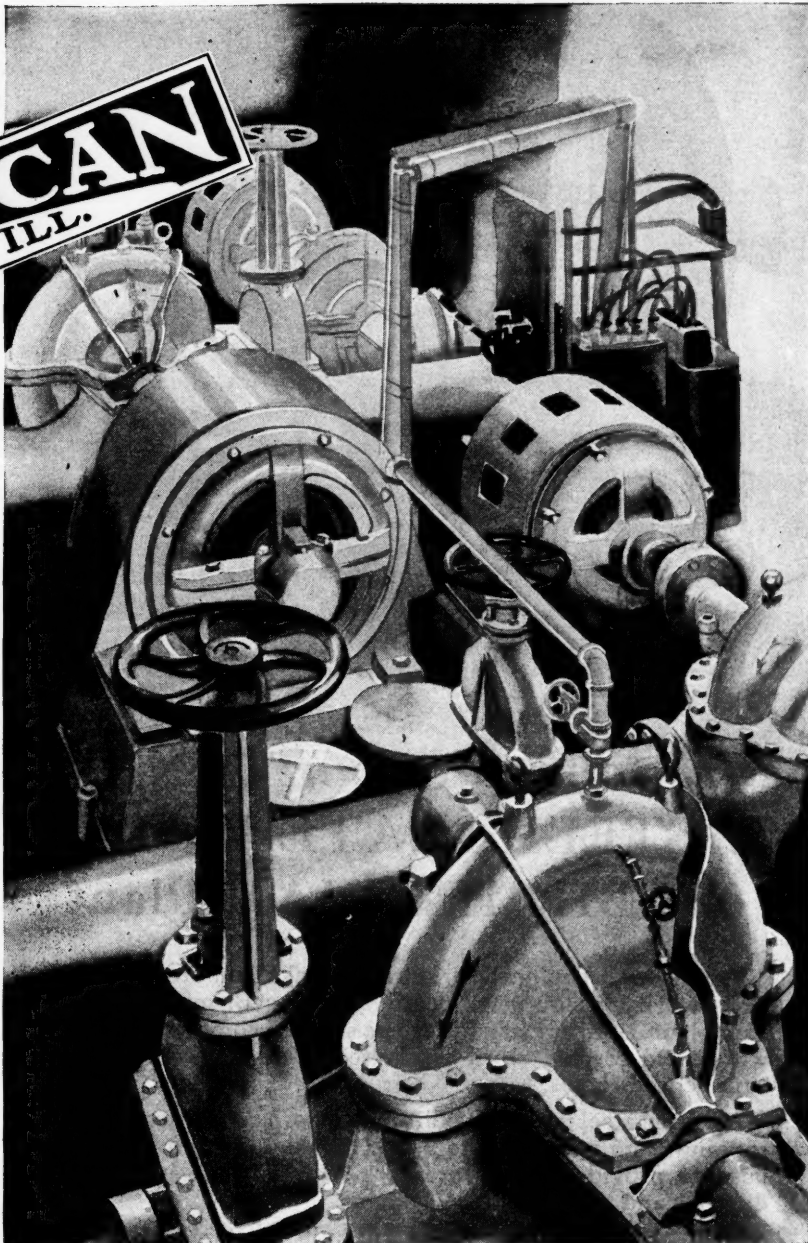
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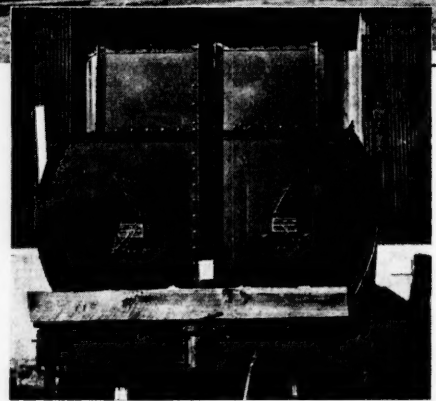
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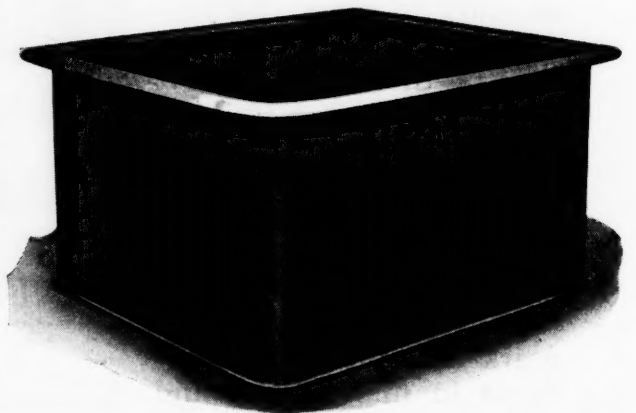
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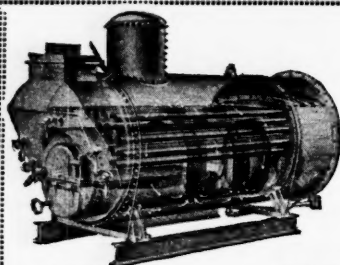
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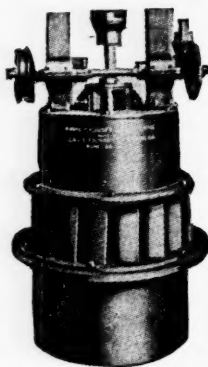


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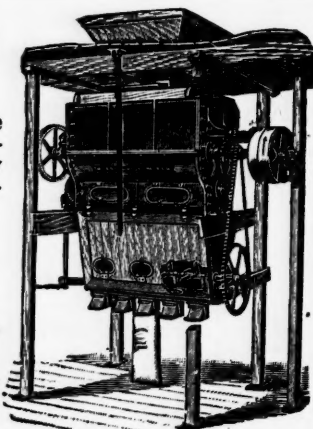
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Philadelphia

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TRINIDAD BONDED ROOFING



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Manufacturers Record

Reg. U. S. Pat. Office

Devoted to the Upbuilding of the Nation Through the Development
of the South and Southwest as the Nation's Greatest Material Asset

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Weekly }

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More Taxpayers and Less Taxes

IT has been suggested ever since there was an income tax law that every resident in the United States should pay a Federal income tax. The proposal naturally has not been popular but it keeps coming up.

Federal income tax receipts for the fiscal year 1930 were \$2,410,000,000, made up of \$1,146,000,000 in individual taxes and \$1,264,000,000 from corporations.

Individual returns were filed by 4,000,000 persons, of whom 2,500,000 paid an income tax and 1,500,000 paid none.

Of 495,000 corporations filing returns, 263,000 showed net returns and 232,000 showed no net returns.

In a national population of 122,000,000 only 2 per cent paid a Federal income tax, and these 2,500,000 persons paid 47.5 per cent of the total national income tax receipts.

Only 53 per cent of 495,000 corporations were subject to the income tax and these paid 52.5 per cent of the Federal income taxes.

The basic argument advanced in favor of population-wide taxation is that ultimately it will curb extravagant Governmental expenditures and so will reduce the national tax burden. A person compelled to fill out an income tax blank and pay even one dollar in taxes will take a direct personal interest in the subject of taxation, and in the national expenditures for which taxes are collected.

The national treasury at the moment faces a deficit of \$700,000,000. This is due largely to the lavishness with which Congress has ladled out billions of dollars. The 119,500,000 people who do not pay an income tax enter no protest, under the delusion that it is no affair of theirs. Yet, it is their affair and it affects their individual pocketbooks indirectly and in substantial measure. To bring this realization home to each individual, through a direct tax levied on his income, is the primary object of the proposed general taxation.

"As long as a large number of citizens paid income

taxes, even though about 2,000,000 paid less than \$25 a year, there was a marked tendency in the Congress to economize," says Senator Hiram Bingham, a member of the Appropriations Committee. "Ever since a large number of income tax payers, who contributed very small amounts directly to the Federal Government, were relieved from filing returns or paying any direct tax, there has been a very noticeable increase in demands for appropriations for all sorts of purposes."

The actual effect of country-wide taxation in keeping down national appropriations and expenditures was demonstrated in Germany before the war. A government tax was imposed on every citizen, starting at a small sum and graduated upward. In the lower brackets, the cost of collection outweighed the total collected; but, as the Raleigh Times well says, "it was thought worthwhile, because nobody who had a crust was untaxed."

"Taxation is the art of getting the most feathers from the goose with the least squawking," is the old practical politicians' definition. With only 2,500,000 persons paying 47.5 per cent of the Federal income, the squawk is almost inaudible to the congressional ear. Concerted protest from 120,000,000 taxpayers would exert an irresistible influence for economy in the Congress.

"The public, the workers and the legislators of this country should realize that large increases in federal and state taxes on industry will inevitably force industry either to increase prices all along the line, or further to curtail operations, or to curtail other expenses, mainly by reducing wage rates," says Noel Sargent for the National Association of Manufacturers. "If industry is forced to reduce wage rates in 1931 and 1932 as a result of mounting burdens of taxation, the responsibility will definitely rest on the federal and state legislators who pass the bills requiring the increased taxes."

In that event, the 119,500,000 persons now paying

no federal income tax will pay very dearly for their present imaginary exemption.

The fact that all the people now pay taxes indirectly is indicated in announcement by Dr. Daniel Starch, consultant in commercial research, that more than 8,000,000 families in the United States are stockholders in some corporation, and that at least 20,000,000 persons in the United States are stockholders in some sort of business enterprise.

Approximately 10,250,000 families have incomes less than \$2000 a year, and nominally are exempt from federal income tax. Yet, even of these, 1,570,000 families, or 15.3 per cent, contain stockholders in a corporation of some kind.

Not a person in the land escapes or can escape taxation, direct or indirect or through the effect of taxation. The impost in actual dollars and cents may be invisible, but it is real and substantial. Direct taxation awakens in the person who furnishes the money a very live interest in the purposes for which it is to be spent and the amount proposed for each purpose.

Every man, woman and child in the United States is entitled to and enjoys all the privileges and protection which this great country provides. Each should contribute directly to the cost.

Pine Forests Costs and Profit

AN epitome of the approximate financial return from pine lands in South Georgia as presented by H. M. Sebring, Assistant State Forester, offers some figures on forest planting and production costs which are exceedingly interesting. In the following analysis, Mr. Sebring has given data on the probable yield from one acre of long leaf or slash pine, protected from fire and under good forest management.

In addition to the final stand of saw-timber containing 10,000 to 15,000 feet which can be grown on one acre, the owner will get a financial return by turpentine those trees that are to be thinned out in the process of growing the saw-timber.

At 20 to 25 years of age the stand should have from 200 to 250 trees per acre. The final stand of saw-timber will, however, have only from 50 to 75 trees per acre. This means that 125 to 150 trees are available as turpentine trees, and each tree can be worked on two faces, 4 to 5 years on a face; at a return of 4 cents per face per year.

These turpentine trees are worked, about 50 at a time, beginning at 25 years of age and continuing until the end of the rotation, 45 to 55 years. As the turpentine trees are worked out, they should be cut down, to give more space and light to the remaining turpentine trees and also to the final stand of saw-timber. The wood in the turpentine trees, as they are cut out, can be used for small poles or cordwood. The turpentine trees cut out near the end of the rotation will make large poles, ties, or even small size saw-timber.

The last group of turpentine trees will also be large enough to support three turpentine faces, instead of only two.

PROBABLE FINANCIAL RETURN ONE ACRE

150 turpentine faces, 4 years on a face, each tree two faces @ 4 cents per face per year.....	\$48
100 small poles @ 25 cents stumpage.....	25
50 large poles @ 50 cents stumpage.....	25
12,000 feet saw-timber @ \$5 per thousand.....	60
Total	\$158

INVESTMENT INVOLVED

Land \$4.00 to \$6.00 per acre.
Taxes 10 to 15 cents per acre per year.
Fire protection and administration 15 to 20 cents per acre per year.

When four or five good healthy seed trees per acre are not present it will be necessary to plant to get a stand of young trees. Planting costs will vary from \$2.50 to \$3.50 per acre. This applies to South Georgia. The costs vary with the type of land and the species planted.

It will cost more to plant some species because they must be given a closer spacing, which will mean more trees per acre.

Species of Pine	Spacing Recommended	No. Trees Per Acre
Longleaf	10 x 10 ft.	435
Slash	10 x 10 ft. or 8 x 10 ft.	435 or 544
Loblolly	8 x 8 ft.	680
Short-leaf	8 x 8 ft.	680

Trees are spaced close when young to keep them from branching, and becoming limby. If they are thick when young they will grow faster in height, since they must struggle with each other for light; and they will incidentally shade out the lower side limbs. At the age of 10 to 12 years they should be thinned to 200 to 300 trees per acre, depending on the site and the species.

FOREST FIRE PROTECTION COST (Basis 10,000 acre unit)

1 Patrolman, 5 months furnishing his own car @ \$125	\$625
Fire fighting equipment	50
Fire breaks to cut land into 200-acre blocks, 3 cents per acre	300
Miscellaneous expenses	25
Total	\$1,000

Figured on this basis, the cost is 10 cents per acre per year. If fire protection work is done under cooperation and supervision of the Georgia Forest Service a 30 per cent refund is given from State and Federal funds, or the cost to landowners would be 70 per cent of the above figure, or 7 cents per acre per year.

On a similar basis the forest fire protection cost on a 25,000-acre unit would be about 8.4 cents per acre per year. If the fire protection work is done under supervision and in cooperation with the Georgia Forest Service, the 30 per cent refund given from State and Federal funds would reduce the cost to about 5.9 cents per acre per year.

Forest fire protection on an 80,000-acre unit would cost 5.4 cents per acre per year, and if the work was done under supervision of the Georgia Forest Service the 30 per cent refund by the State would bring the cost down to about 3.8 cents per acre per year.

Some time ago, C. A. Whittle, director of education

of the Georgia Forest Service, pointed out that Georgia has 23,000,000 acres in forests, covering nearly 64 per cent of its total area. From its high altitudes in the North to its low coastal plains lands in the South, Georgia grows approximately 163 species of trees. Of this number, 53 are now yielding or are capable of yielding valuable products.

About 6,000,000 acres of abandoned or low-yielding farm lands could be added to the 23,000,000 acres now in forests in Georgia. "Then," asserts Mr. Whittle, "with proper management Georgia forests would easily grow 8,000,000,000 board feet of timber annually." In no other way, it is asserted, can the State of Georgia increase its wealth with so little output of money and effort as by giving forest trees an opportunity to grow. This opportunity can be created by keeping down forest fires. The cost of such protection as outlined is relatively small, and the estimates for Georgia apply in the main to every state in the pine belt of the South.

Atlanta Constitution Honored

GRATIFICATION in the South on the award of the Pulitzer public service prize to the Atlanta Constitution is not confined to newspaper and magazine circles, but is shared in great measure by persons in many other lines, familiar with that great journal. Equally, the Constitution may well take pride in having accomplished "the most disinterested and meritorious public service in 1930." It is characteristic of the Constitution that this service was an adventure in the protection of the public against dishonesty, and in insistence on clean government, in this case in its home city.

Keeping the Worker at Work

SUCCESS in the maintenance of employment in the wood-preserving industry in the South is highly gratifying.

Of 11 organizations reporting to the American Wood-Preservers Association, two are operating on full time and full pay and only one reports wage and salary reductions. Three others have reduced personnel to some extent, but the remainder are maintaining substantially their full number of employees by readjustments in working hours.

"Several of the companies report they have added to employment by increasing work on maintenance and repair and in some cases by undertaking new construction," states Horace L. Dawson, secretary-treasurer of the association. "Increased expenditures for advertising and research also are given prominent mention. Some firms have taken advantage of present low material prices by manufacturing for stock or by developing new products."

Comments on the Present Situation

THE Wall Street Journal in asserting that the real wage problem is whether production costs are an obstacle to the marketing of products and, if so, whether present wage scales are responsible for such high costs, makes this pertinent comment:

"Since men and women who work for wages must absorb the larger part of the production of all labor, high wage scales are good only to the extent that they promote and do not hinder the absorption of goods. If all wages could be high and all labor could work full time, the problem of wage adjustment would be simple.

"The fact is, however, that an important part of the wage-earning population is either without income or has had its earnings reduced by part-time employment. That part of the working population is, nevertheless, called upon to use what purchasing power it has to absorb the production of high-priced labor as well as the goods now being produced on a lowered wage. Housing, by way of illustration, remains expensive for those whose monthly earnings have been reduced. Lower building costs, besides putting idle artisans at work, would mean lower rents or better homes for vast numbers of families.

"Fear that an all-around lower wage scale, if established now, would persist for many years, is groundless. Extraordinarily rapid changes in economic conditions are part of the new business world that has come in with modern scientific methods. One of the first effects of industrial revival, when it comes, will in all probability be the raising of wages where they have been depressed. It is inequality of buying power among large segments of the population that now holds business activity in check."

Letters from various manufacturers in different parts of the country have been received commenting on the editorial "The Present Situation," which we published April 30. Some expressed the thought that they had tried to go along with the idea that the wage scale must be maintained in line with the expressed wish of the Administration, and because they expected prosperity to return before this. But having reduced costs in every other direction to what is described in one letter as "the irreducible minimum" they have been forced to the conclusion that their position has been wrong. In this connection we quote extracts from one of the letters received which gives the views of a leading iron and steel manufacturer of the South. He writes:

"Until 90 days ago, I believed that it would be a mistake to make a horizontal cut in wages and salaries. This was on the theory that business would have revived some time ago and that it was unwise to decrease the purchasing power of the wage earner and salaried man. Instead of things getting better, they have gone from bad to worse, with the result that the employer has been taking tremendous losses each month.

"I have changed my mind and in so doing I am of the opinion that I have performed genuine service to our employees, because, with lower costs, it will enable us to compete more successfully. It was ridiculous to think that we could include the old rates in our estimates and expect to obtain contracts. It is equally absurd to say that any company can, for a protracted period, deliberately sell its products below cost without dangerously impairing its financial position.

"I think the building industry is suffering more than any other by reason of the workers in that line being unwilling to accept reasonable cuts. As a matter of fact, building could not proceed today were it not for the fact that the manufactured articles, laid down at the building site, are furnished at less cost than ever before. All of this saving has been dissipated in the high wages and inefficiency of building workers. Carpenters, bricklayers, and other trades belonging to Unions, are receiving wages entirely out of proportion to the service rendered."

Gain in Industrial Construction

THE following résumé of construction and building activity in the South presents an encouraging picture:

Reports from various building inspectors' offices in municipalities throughout the South covering the valuation of permits issued last month have confirmed the upturn in construction activity as revealed in the summary of awards published in the MANUFACTURERS RECORD, May 7, covering building, engineering and construction projects reported during April in its construction columns. The showing becomes the more significant when it is considered that building and construction activity throughout the country in general declined in April.

May activity opened in encouraging volume with numerous important awards and projected undertakings. The biggest industrial project reported in many months is a chemical plant to be constructed at Corpus Christi, Texas, by the Southern Alkali Corporation, preliminary details of which were announced shortly after the first of the month. This new corporation, an affiliate of the Pittsburgh Plate Glass Company and the American Cyanamid Company, will erect a plant on a 350-acre site, to which a channel two miles long will be dredged from Corpus Christi Bay.

Another important industrial announcement last week was the decision of the Sylvania Industrial Corporation, New York, to begin work immediately on a \$1,000,000 addition to its comparatively new plant at Fredericksburg, Va., to increase production of transparent cellulose paper.

On June 4 bids will be opened for construction of a combined railway-highway bridge across the Mississippi above New Orleans, estimated to cost \$15,000,000. The Chesapeake & Ohio Railway Company awarded contracts for line revision work near Fort Spring, W. Va., estimated to cost \$1,200,000. The Chesapeake & Potomac Railroad Company, subsidiary of the Washington, Baltimore & Annapolis Railroad Company, proposes a double-track freight line to link the Fairfield-Curtis Bay-Brooklyn industrial district with its electric line at Shipley, Md. Contracts for five buildings for a passenger coach repair yard of the Texas & Pacific Railway Company at Fort Worth, have been let.

Sinclair Oil Company, New York, con-

templates a \$1,000,000 oil pipeline from East Texas fields to Mexia. The Mid-Kansas Oil & Gas Company, said to be associated with the Ohio Oil Company, Findlay, Ohio, may build a 10-inch oil pipeline from East Texas fields to a central storage and distributing plant at a cost of \$1,000,000. The Houston Oil Company is said to plan a \$1,000,000 improvement program at its Viola, Texas, refinery. Contracts have been awarded the National Tube Company for 12,000 to 15,000 tons of pipe for the Columbia Gas & Electric Company's project from Kentucky and West Virginia fields to Washington, D. C., and Coatesville, Pa. The Shamrock Pipe Line Company, Amarillo, Texas, is reported considering plans for a \$5,000,000 oil pipe line from East Texas fields to the Gulf of Mexico. The Panhandle Power & Light Co., Borger, Texas, proposes 74 miles of gas pipe line. Over \$500,000 will be expended by the Western Service Corporation, Oklahoma City, in piping gas to five Oklahoma communities.

Towns and cities throughout the South report construction under way in encouraging volume, indicating the building industry is swinging back to normal. At Beaumont, Texas, \$5,000,000 will be expended this year for construction, exclusive of residences and repairs. Plans are being completed at Tulsa, Okla., for projects to be financed out of a \$6,230,000 bond issue voted in February, 1930. Work is under way there on a \$650,000 addition to the Federal building; a \$500,000 bridge is being built across the Arkansas River, and numerous important private and public undertakings are in various stages of progress.

Birmingham building operations aggregating \$391,000 were undertaken in April, showing an increase of \$66,000 over the fourth month of last year, when the total was \$325,000. Birmingham's total for March this year was \$280,000.

Building permits issued during April in Roanoke, Va., totalled \$276,000 compared with projects amounting to \$295,000 in April, 1930. Increasing activity in the real estate market and in construction last month affords evidence of the steady movement toward the return of Nashville, Tenn., to better conditions. The valuation of building permits issued in April, in St. Louis, was \$4,568,000 compared with \$2,577,000 for April, 1930.

Construction work in Greensboro, N. C., for the month of April surpasses that of any other month this year, and was the highest since October, 1930.

SUMMARY BY CLASSIFICATION OF CONTRACTS AWARDED AND PROPOSED WORK. APRIL, 1931

	Contracts Awarded	Proposed Work
Apartment houses and hotels	\$1,068,000	\$726,000
Association and fraternal	1,114,000	220,000
Bank and office buildings	425,000	1,350,000
Church buildings	274,000	1,240,000
City, county, government and state projects	6,743,000	6,053,000
Dwellings, costing \$10,000 and over.....	3,071,000	1,150,000
Miscellaneous	31,214,000	24,247,000
Roads, paving and bridges	36,892,000	24,472,000
School buildings	3,806,000	11,740,000
Sewers, drainage and water works	3,214,000	24,969,000
Store buildings	1,063,000	1,335,000
Total for April, 1931	\$88,884,000	\$97,502,000
Total for April, 1930	52,242,500	101,256,500
Total for March, 1931	68,987,000	88,278,000
Total for April, 1929	107,097,500	
Total for April, 1928	72,648,500	
Total for April, 1927	59,025,000	

\$279,000 Louisville School

Louisville, Ky.—Contracts aggregating more than \$279,000 have been awarded by the Board of Education of Louisville, Samuel D. Jones, business director, for an elementary school at Larchmont and Nevada avenues, in Garden Acres Subdivision. General contract was awarded H. G. Whittenberg, at \$215,300; heating and ventilating to H. Netherson & Co., at \$43,878; plumbing to the same firm, at \$12,948, and electrical equipment to the Utilities Appliance Co., at \$6982, all of Louisville. This building is a part of a \$3,000,000 school building program being carried out by the Board of Education. The Board plans to invite bids early in June on another building.

\$400,000 Institutional Buildings

New Orleans, La.—A group of three buildings to cost about \$400,000 will soon be erected on Palmetto street, between Pine and Lowerline streets, for the Sisters of the Blessed Sacrament. Plans and specifications are expected to be completed within 60 days. Wogan & Bernard, New Orleans, are the architects.

Natural Gas *in* Southern Industry

By

J. B. NEALEY

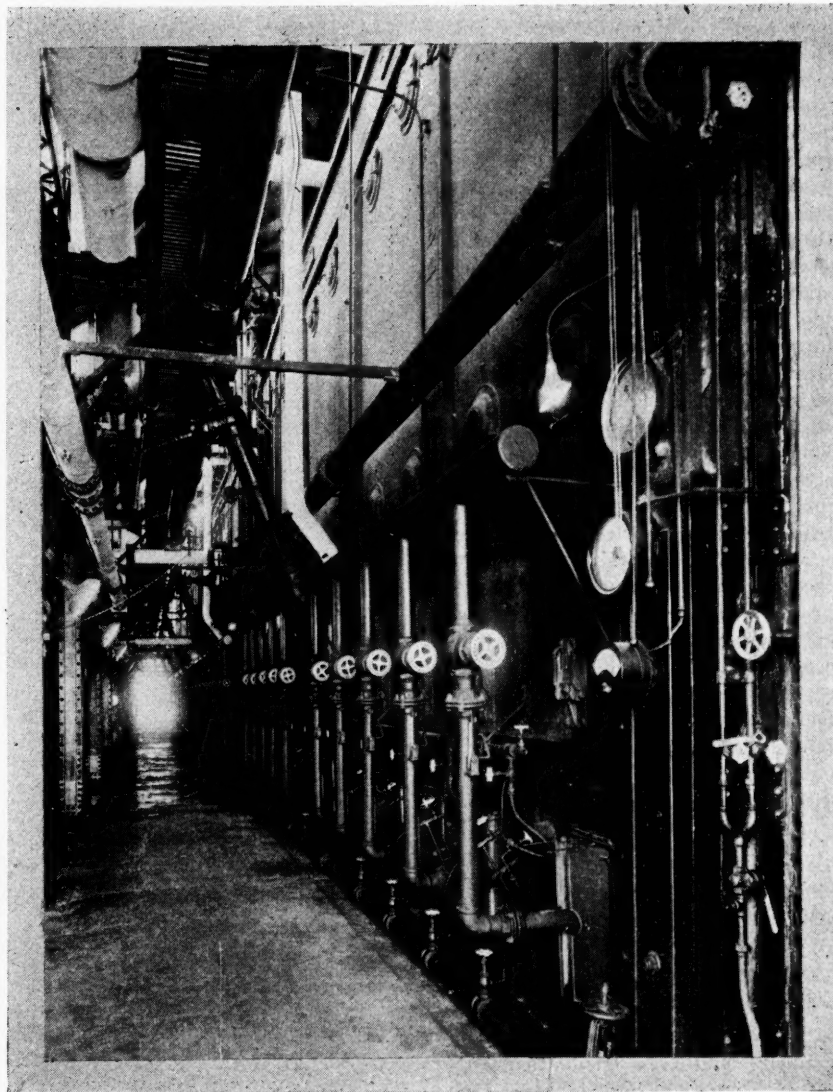
American Gas Association,
New York

NATURAL gas, which now joins coal, oil and waterpower on America's industrial stage, introduces a new factor in methods of process-heating in industry, with a number of different applications. Use of this fuel is partly due to recent discoveries of very large supplies, and its transmission to many new localities. Some Southern industries employing natural gas for heat and power generation are here outlined to show the diversity of application of this comparatively new fuel resource.

Fuel for Steam-Electric Generation

Millions of cubic feet of natural gas now are used under the steam boilers of electric generating plants. An example is the new Deepwater plant of the Houston Lighting & Power Company, Houston, Texas, which serves that city and more than 75 towns in the surrounding territory with electricity. The company has just constructed a new unit, one of the most modern and up-to-date electric generating plants in the country.

In line with the recent trend of building larger boiler units with higher steam pressures, two new boilers recently built at this Deepwater plant with water walls, superheaters, steam and air reheaters and economizers, will stand a pressure of 1450 pounds. These boilers, together with the other boilers in the plant, are fired with natural gas. Twenty gas burners, each arranged in two rows, fire directly into the fire box, through a wind box, the hot products of combustion rising up through the boiler tubes and through the economizer. Forced and induced drafts, created by motor driven fans, control the flow of heat, and just before it goes out the stack it is used in a preheater to heat fresh air for combustion at the burners. The type of burner used consists mainly



Battery of 12 Boilers Used by Freeport Sulphur Co., Freeport, Texas, Showing Gas Burners and Standby Oil Facilities

Boilers operate at 200 per cent of rating, using 14,000,000 cubic feet of gas in 24 hours

of the air register and gas burner, while there is also an oil burning attachment for use where gas is not available. The gas burner is a hollow annular ring bolted to the inner plate of the air register, the gas entering through one large inlet and issuing through a large number of small ports in the inner periphery of the ring.

Household and Building Heating

An instance of the use of natural gas in hotels, apartment stores, office build-

ings, hospitals and homes is the power plant of the St. Charles Hotel, New Orleans, which consists of three Heine boilers, one of 200-horsepower, fired with a single gas burner, and two of 500-horsepower each, heated with three gas burners each. The steam pressure is automatically maintained by means of a regulator. The three boilers are connected to a single steam header and from this are three takeoffs, one to the generator engines, one to the kitchen and one to the laundry. The first serves four steam engines, 890 horsepower all

told. This takeoff also serves two steam-driven compressors, a five-ton ice-making plant and a 10-ton brine circulating refrigerating plant. In the kitchen are four gas ranges and much other cooking apparatus, and the bakery contains a gas-fired peel oven, heated with a single gas burner cemented into the front wall and firing beneath the hearth.

Roofing Manufacturing

Flintkote roofing made by the Flintkote Co., which maintains several plants in various places, consists of a heavy sheet felt base made from rags; this base is saturated in asphalt, then covered on both sides with asphalt and coated with crushed slate on the weather side and with mica or talc on the reverse side. The felt base is made from rags in a modified paper mill. Two grades of crude asphalt are used and these are oxidized or "blown" in a series of 10 horizontal stills, ranging in capacity from 3500 to 10,000 gallons each, and provided with tubes in the bottom through which a blower forces air during the refining process. Heat is supplied to each still through one low pressure gas burner located in the front brick work, close to the bottom. The sheets of felt base are passed through the saturation tank by a series of steam heated rolls and when they emerge the excess asphalt is squeezed off between other rolls. The sheet then passes through the coating machine where hot coating asphalt is applied to both sides at a temperature of about 400 degrees Fahrenheit.

The melted asphalt is pumped from the still to a superheater, or continuous heater, then to the saturation tanks. The superheaters are banks of boiler tubes set in brick furnaces and heated with gas burners at both ends.

Lime Making

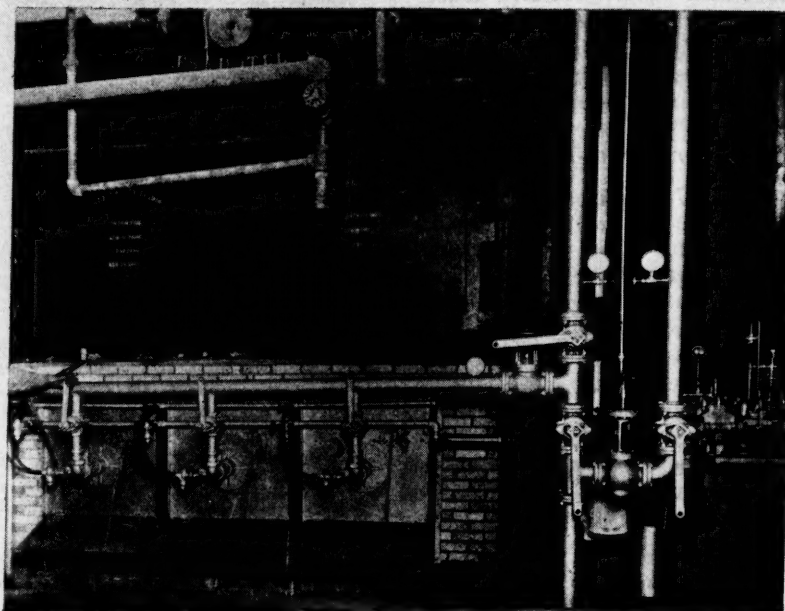
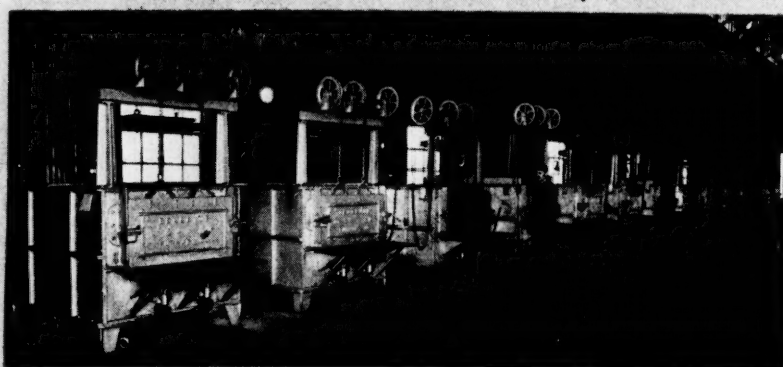
In Texas, natural gas is used in making lime from oyster shells through a giant calciner. The Haden Lime Company, near Houston, has built a calciner which is a heavy steel shell, tubular in shape, 60 feet long and 6 feet in diameter. A 30-horsepower motor is required to rotate it. Heat is supplied by a single gas burner of great capacity, located in the discharge end, and which fires directly into it, burning the shell to a clinker. Hot air for combustion is drawn from over the calcining zone of the kiln, which is hooded, and forced into the burner by fan. There is a 94-foot stack at the charging end of the kiln through which waste products of combustion are drawn by natural draft.

Sulphur Mining

The Freeport Sulphur Company, Freeport, Texas, the world's second largest

sulphur producer, uses a bank of 12 boilers, 700 horsepower each, and each fired with five gas burners. These burners are complete combustion units and most of them are provided with complete

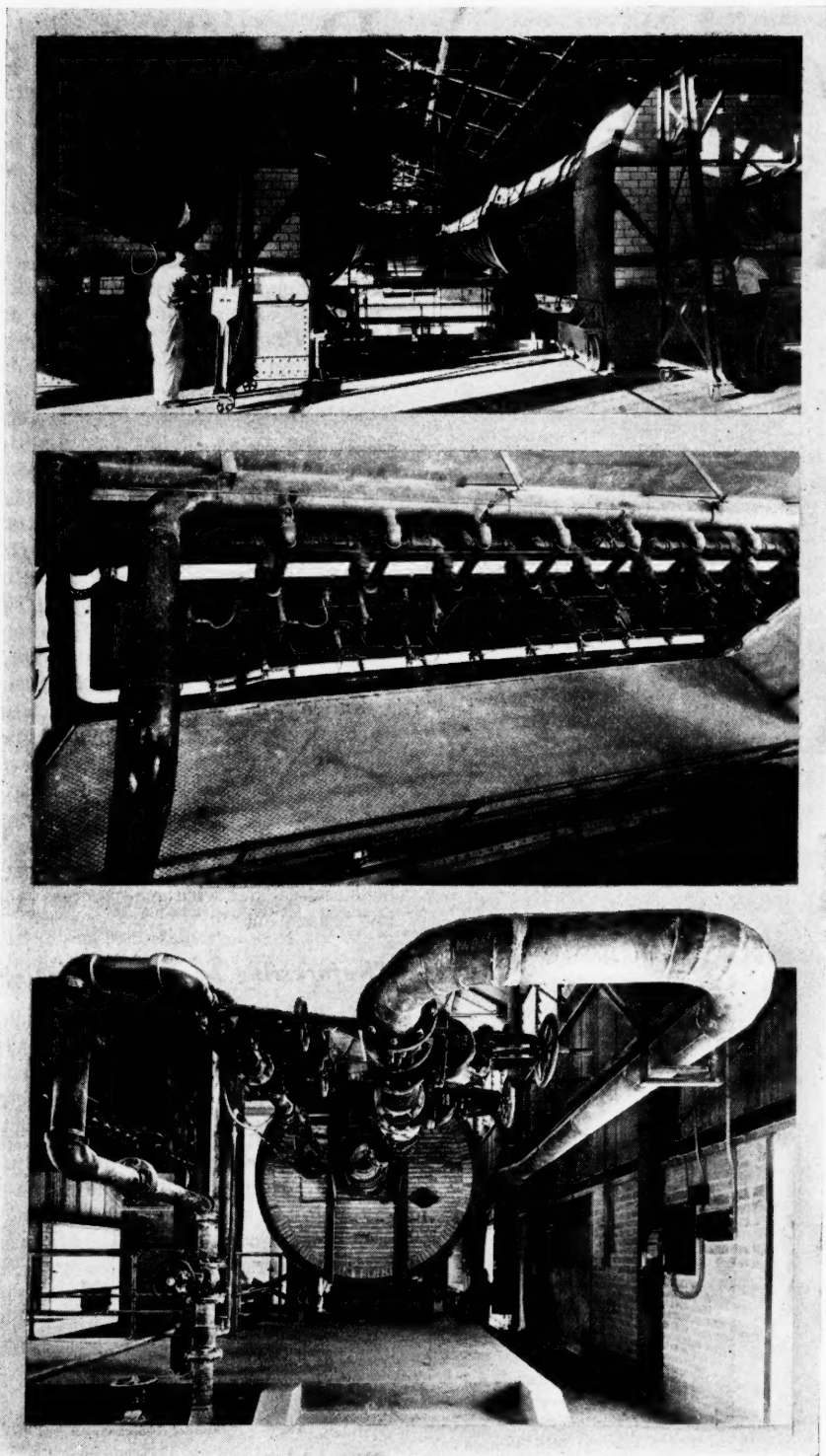
automatic controls. The gas burner here used is of the low pressure, atmospheric type, consisting of air damper and frame, gas manifold and refractory mixing block, and primary air for combustion



Top—Gas-fired Glost Kilns in Pottery Works of Homer Laughlin China Co., Newell, W. Va. View From Charging End

Center—Long Row of Gas-fired Furnaces Used for Various Kinds of Heat-Treating in Plant of Guiberson Corporation, Dallas, Texas

Bottom—Gas-fired Boiler in St. Charles Hotel, New Orleans. Through Use of This Fuel and a Pyrometric Control, a Definite and Predetermined Steam Pressure is Automatically Maintained at All Times



Top—Cement Kilns Showing Gas Burners Firing Into Discharge Ends in Plant of Republic Portland Cement Company, San Antonio, Texas

Center—Lower Boiler Front in Which Are Set the Burners as Used in the New Deepwater Plant of the Houston Lighting and Power Company, Houston Texas

Bottom—Firing End of the Rotary Gas-fired Kiln in Plant of Haden Lime Company near Houston. Showing Gas and Air Piping With Temperature Control Equipment at Right

only is used. The boilers furnish steam to three turbo-generators which supply electric current for motors operating drilling equipment and some of the pumps in the field. The remainder of the steam is employed in the engines op-

erating the 36 pumps in the plant, as well as the air compressors.

Heat Treating

Heat treating is a feature of the plant of the Guiberson Corporation, Dallas,

manufacturer of oil well supplies, where the heat treating department is served with 13 gas furnaces in which the products are heat treated. This heat treating room layout, including furnaces, air and gas lines, boosters, quenchers, hoists, etc., provides great flexibility for handling and control.

Natural Gas in Ceramic Industry

Among the cement plants using gas is that of the Republic Portland Cement Company, San Antonio, Texas, which has a capacity of 4000 barrels a day. The kilns are 11 feet in diameter and 250 feet in length, and the gas burners, blowers and control panels are located on the firing deck at the discharge end. The type of gas burner employed consists of two cast iron parts, the mixing chamber and the nozzle.

The ceramic industry also is trying out natural gas in an effort to control kiln temperatures closely. Prominent in this movement is the Homer Laughlin China Company, Newell, W. Va., which owns the largest pottery works in the world. Here are made 500,000 dozen pieces of tableware monthly, in eight plants employing more than 2800 workers. The product is said to be the most difficult item known, to handle mechanically. This plant has three continuous tunnel kilns, bisque, glost and decorating, respectively, which have a production equal to that of the 20 periodic kiln type of plant. Of the eight plants owned by this concern, four are of the old style and four of the modern type, while gas is the fuel used throughout the works.

In the firebox section of the 162x4x6 foot decorating kiln are located four gas burners on each side and close to the bottom, the flames impinging on refractory surfaces to procure faster heat radiation. These burners are equipped with proportional mixers, which provide any atmosphere desired, oxidizing, neutral or reducing, through regulation of the gas-air mixture. Temperature control ranging from 500 to 1400 degrees is automatically maintained through four thermocouples in the firebox, connected with four controlling and recording pyrometers and solenoid controlled air operated butterfly valves on the gas supply lines.

Contracts on \$500,000 Church

General contract to erect a new \$500,000 church for St. Joseph Monastery, Baltimore, has been awarded to McCloskey & Co., Inc., Philadelphia, Pa. The building will be 226 by 132 feet. Plumbing and heating contract was awarded to the William Hellbach Heating Co., Baltimore. Hugh I. Kavanagh, Baltimore, is the architect.

Trees *for* Future Profit

PINE trees only 13 years from the planting of seed have grown to a height of 30 to 40 feet and are five to seven inches in diameter in a forestry demonstration being conducted by the South Carolina Experiment Station at the Coast Station near Summerville. With such growth in a dozen or so years slash pine begins to yield up its money, according to W. R. Mattoon, extension forester of the U. S. Forest Service, for the trees then can be worked for turpentine, and select cuttings can begin for thinning to the future advantage of the best trees. Not too much later, the main crop yields good money returns from naval stores and timber.

Information is now available on how to reforest denuded cut-over lands in the Coastal Plains. This has been secured

By
A. B. BRYAN

Agricultural Editor,
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by means of experiments carried on during the past 18 years at the South Carolina Coast Experiment Station, in cooperation with the Forest Service, U. S. Department of Agriculture. If the land has two to six seed-bearing pine trees per acre and is protected from fire, it will usually "come back" rather quickly with a good stand of young pines, but for the large areas without sufficient seed trees, on some of which at least the owners may desire to grow another crop

of pines, there are other possibilities in reforestation.

The Promise of Slash Pine

Slash pine possesses some unusually valuable characteristics. It seeds abundantly and grows rapidly. In addition the slash pine is claimed to produce crude turpentine in greater amounts than the longleaf, and its wood is slightly harder, heavier, and stronger than that of longleaf pine. Slash pine is native from South Carolina to Louisiana. This slash pine is very promising for use in reforesting low, poorly drained lands in the Coastal Plains region of the South. A caution is not out of place here against attempting to grow slash pine higher than the upper part of the Coastal Plains. Slash pine is easily propagated from seed, sown broadcast or in seed-spots on the land to be reforested. Seedling trees can be easily grown in nursery beds and set out with good success when one season old.

Reforestation by Direct Seeding

The methods of reforestation which appear to be applicable to local conditions in the Coastal Plains are: Direct seeding on wet or moist soil and planting small yearling trees on any type of land.

By direct seeding is meant the sowing of seed directly on the land to be reforested. It may be done broadcast, on low, poorly drained land that preferably has one-year's growth of native grass. If the land is somewhat higher and has a much thinner cover of grass, there could be several years' growth of grass. Better germination has followed the practice of harrowing the grass after sowing the seed. This helps to bring more seed in contact with the soil. The results were much poorer where slash pine seed was sowed on freshly burned grass land. A stand of grass seems to be a natural nurse for young slash seedlings by increasing the moisture in the air and affording shade and protection from drying winds.

Sowing the freshly gathered seed in the fall has given better results than sowing in the spring. A good time appears to be about the last week in October or the first week in November. A pound to a pound and a half of good quality seed may be sown per acre with expectation under average conditions of

Slash Pine
Trees 14
Years Old at
Coast Ex-
periment
Station,
Summer-
ville, S. C.

These trees
are from
yearling seed-
lings shipped
from Florida
and set in
1916. They are
10 inches in
diameter and
45 feet high.
The trees are
described as
probably be-
ing the oldest
planted slash
pines in
South Caro-
lina



getting a stand of 1000 to 1500 trees when five years old.

Early losses are usually heavy from various causes including attacks on seed and seedlings by insects, birds, and mice, and the dying of young seedlings from fungus diseases.

Another method that has been given a good test is to sow about 10 seeds in a hoed spot, the spots to be made in the tops of furrows and spaced regularly. For example, good spacings are six by six feet, five and a half by eight feet, or eight by eight feet. These spacings give the following number per acre: 1210; 1000 and 680. A good method is to scatter the seed on soft soil and press them in with a hoe or the foot. The resulting regular spacing is advantageous, but the method requires labor in furrowing, sowing the seed, and later in thinning out excess trees in the spots. This seed-spot method requires one-third to three-fourths of a pound of seed, or less than broadcasting, and should give a better spacing of the final pine stand.

Slash pine trees usually bear heavy crops of seed, or "mast," about every second or third year. The burrs, or cones, should be gathered any time in the fall after becoming half brown and before they begin to open, a period of about three to four weeks.

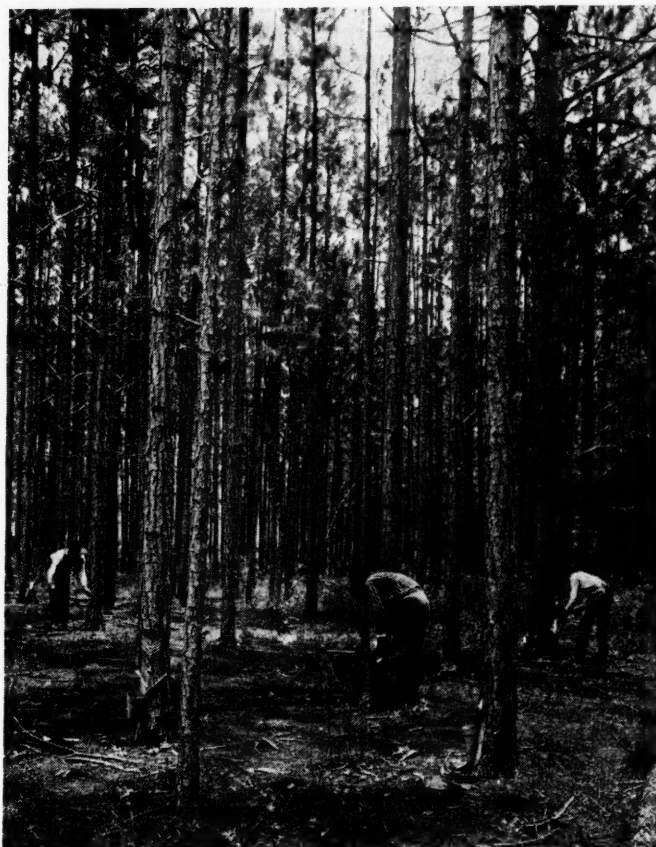
Seed may be purchased from commercial nurserymen, from some of the state agricultural colleges in the South, or from private seed collectors.

Reforestation by Planting Trees

A method of successfully reforesting land in general use throughout the South is to set out small year-old pine seed-

Slash Pine Stand Being Worked for Turpentine.

This variety of pine is specially desirable because of the quantities of "gum" that may be produced from it, and the spirits it contains



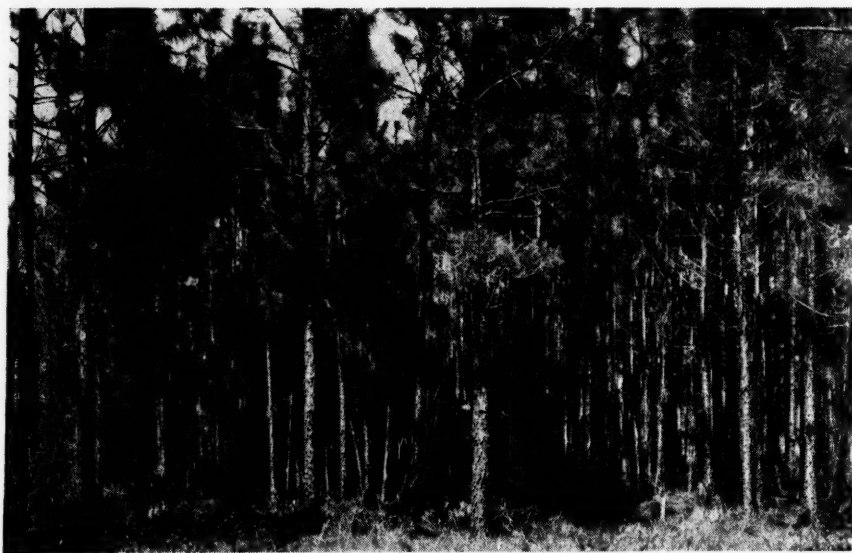
lings. Although a more certain method, it happens that it has not been used, except on a small scale locally at the Coast Experiment Station. Successful plantations of slash pine have been made by the Southern Railway in Dorchester county and on farms in various counties. In Louisiana one large lumber company has over 12,500 acres of hand-planted young slash pine forest. The method is generally applicable to all the pines in-

cluding longleaf, loblolly and shortleaf.

The seedlings and the labor in setting them at the rate of 800 to 1000 per acre usually cost as much as or more than sowing the land with seed. Resulting advantages are a desirable uniformity in the stand of trees and no labor costs for early thinning of an overcrowded stand. Although original expense of planting pine seedlings may be greater, cost per thousand of surviving trees is often less.

Small yearling seedlings of slash pine often can be found in old fields near mature seed trees; they may be grown in a nursery bed at home or purchased at cost from the State Forestry Commission at Columbia. "Wild" seedlings that are carefully dug up in loose farm soil are often satisfactory, but not those dug up in sod or tight soil where they have lacked root development. If the acreage to be planted is large, it would likely pay to establish a nursery and grow the trees. Applications for seedling trees should be made to the State Forester several months in advance of the time for planting. With an increasing demand for small trees it is essential that demand be known at least several months in advance. The county agent is in a position to assist in timber growing as a crop on the farm.

In the late winter or early spring before the buds begin to swell, the conditions of soil and weather are mostly favorable for planting pine seedlings. Late



Slash Pines 12 Years After Sowing

The trees are now 30 to 35 feet high and 4 to 6 inches in diameter. They are much overcrowded and are soon to be thinned. This stand promises a large yield in crude turpentine, or gum, and timber

fall planting may give good results if the work is done only after the fall rains set in, usually some time after the first of December.

A good method of planting small pines is for two men to work together, one making the holes and one planting the trees. A two-man crew in average loose sandy soil can plant 1000 to 1500 trees a day. The essentials are to keep the roots fully wet at all times, to plant with roots spread out in as natural a position as possible, and to pack firmly the soil to check rapid drying.

Usual spacings of furrows are six or eight feet apart in which trees are planted five to eight feet apart. A spacing of six by six (1210 to an acre) is the closest practicable; 5½ feet apart in furrows eight feet apart makes 1000 trees per acre, a desirable number; and eight by eight feet apart gives a stand of 680 per acre. Allowing for some failures, this last is too open.

What It Costs to Plant

Considering the better root development of nursery-grown stock, it is probably more satisfactory to grow seedling trees at home or purchase them from the State Forestry Commission. At \$3 per thousand for nursery-grown seedlings, 680 seedlings per acre (a spacing of eight by eight feet) will cost \$2.25 for the trees. With spare hands and teams in winter the farmer may be able to plant trees at a somewhat lower cost. Probably the planting of 1000 seedlings per acre can be done at a total cost of \$5 with the possibility likewise of lessening the cost by items of cheap labor and teams.

It is very necessary that young pine be protected from injury. The damage and loss to forest growth caused by fire exceeds the combined effect of all other injurious agencies. The yearly burning of the woods, extensively practiced in the past, has been done with little realization of the enormous damage to the timber and forest land and of the money loss to the owner. Sheep and goats are invariably harmful in eating the tender buds and tips of the pine seedlings, and sometimes cattle do much damage of the same kind.

How They Grow and Yield

Measurements of many stands in various parts of the South from South Carolina to Louisiana show that slash pine averages a faster growth than any other native pine up to about 20 years. Afterward its growth is a little slower than that of loblolly. At the Coast Experiment Station, on low crayfish land, the trees at 12 years, from seed, have averaged a yearly growth of two to two and a half feet in height and in that time

have grown to be four to six inches in diameter. The largest trees in full stands, at 13 years old from seed, are eight inches in diameter and 35 feet in height.

It will be of interest to include here some figures showing average sizes of trees at different ages grown in close stands on different qualities of soil, and also the yield of cordwood and sawlogs under the same difference in conditions. For example, close or well-stocked stands 30 years of age and on average quality land, should contain about 305 trees averaging eight inches in diameter and 63 feet in height. There should be about 37 cords of peeled cordwood or 48 cords of unpeeled wood; or if cut into sawlogs, instead of cordwood, the stand should cut out about 11,800 board feet. The difference shown in the number of cords or in board feet between any two successive ages shows the rate of production during that period.

Cash Returns Likely

Slash pine is regarded generally as one of the few most profitable trees to grow on low grade land in Coastal Plains areas in the South.

When 12 to 15 years of age, some of the trees in a stand can be worked for turpentine and then cut out to the advantage of the total growth of timber on the land. Later the main crop of trees should yield a good money return from naval stores before the trees are cut and utilized.

Slash pine is cut and sold exclusively as paper pulpwood, veneer bolts and sawlogs. The tree grows straight and clean and along with longleaf pine makes the highest grade of poles and piling. Many cases have been known of slash pine yielding a money return averaging \$5 per acre per year over a period of 20 to 30 years.

\$750,000 Pipe Line Completed

Shreveport, La.—The Atlas Pipe Line Company, Inc., of this city, organized early in March to acquire the property of the Shreveport-El Dorado Pipe Line Company, has completed a 65-mile trunk line from the Shreveport refinery to the East Texas oil fields, and the refinery at Shreveport of 10,000 barrels daily capacity. The new line to East Texas, tapping the Kilgore, Longview and Joinerville districts, has a daily capacity of 18,000 barrels and provides the company with an 8-inch line to carry East Texas oil through Shreveport to El Dorado and Smackover and deliver it to El Dorado refineries. Pipe for the project was purchased from the Jones & Laughlin Steel Corporation, Pittsburgh, Pa., and construction work handled by the Atlas organization. Pumping equipment consists of De La Vergne 200-horsepower oil engines and Worthington pumps. The cost of the project was approximately \$750,000.

\$600,000 Port Program

Lake Charles, La.—The Board of Commissioners of the Lake Charles Harbor and Terminal District plans to award contracts in June for a \$600,000 dock program, for which bonds are to be sold

May 19. The project will consist of a new wharf unit 1600 feet long and 201 feet wide, to carry two steel wharf sheds, each 700 feet long and 160 feet wide. The front portion of the wharf structure will be carried on creosoted timber piling, while the back or shore half will be a concrete floor extension on a sand fill. Two apron tracks will be carried along the front of the wharf on a 31-foot open apron and two depressed tracks will be installed on the rear or shore side of the structure. Elmer E. Shutts is the engineer of the Lake Charles Harbor and Terminal District.

Record In Pipeline Work

Big Lake, Tex.—Crews of the Oklahoma Natural Gas Corporation, Tulsa, Okla., have completed in record time construction of a natural gas pipe line for the West Coast Power Company, which involved driving nearly 120 miles of steel pipe through rock and soils where bad corrosive elements were encountered. The line consists of 12-inch pipe from Big Lake east to San Angelo, 77.1 miles, and 8-inch pipe from Big Lake west to the Pecos Valley power plant near Girvin, Tex., a distance of 42.72 miles. Eighteen miles of the line run through rock. Work started March 24 and was finished nearly three weeks ahead of the scheduled time for completion—May 14. Construction was in charge of R. W. Hendee, Tulsa, vice-president of the Oklahoma Natural Gas Corporation.

Save *the* Railroads

By

EDWIN C. FINLEY

Civil and Structural Engineer,
Tupelo, Miss.

IF each person realized the importance of the railways of this country to our national welfare everybody would at once become vitally interested in their salvation. There has been some little discussion of the matter in the trade journals and some in the daily press but nothing like the interest that should be apparent on this important subject which is now at the critical period when any disposition of the matter is of paramount importance.

In the MANUFACTURERS RECORD some time ago there appeared a discussion of the matter by Mark W. Potter in which he offered a suggestion for some relief in the way of rate increases to offset the tax burden. This suggestion, in part, with some modifications might prove to be valuable but not to the extent of having the Government own the right of way or any part thereof. There are other ways of establishing fair and just competition between bus and truck lines and the railways that can and will be found.

Lower rates, on a profitable basis, are preferable to higher rates for many reasons. The tax burden, rapidly becoming intolerable, is a factor toward higher rates. Its potentiality in that way is easily realized when consideration is given to the fact that the railroads pay nearly half a billion dollars annually in taxes. They must earn approximately \$1,200,000 every day in the year with which to pay taxes, after which they must earn enough for operating expenses and fixed charges before reaching the profit and loss column; also there is probably quite a loss in railroad traffic due to the fact that the total amount of taxes paid by the whole country is temporarily out of commercial business and the reduction of business from this cause would be lessened by a general tax reduction.

In consideration of a measure for relief, the suggestion of a 10 per cent horizontal increase in rates as proposed by Mr. Potter might be used in this way: Select only the lines in distress and apportion the increase to them with the understanding that it is done as a relief measure only and with the stipulation that, if taxes are reduced, rates must be reduced on some properly developed ratio, so that the increase in rates will have been absorbed by reduction in the taxes to some reasonable amount. This

temporary expedient being applied to the lines in distress and getting taxes reduced to a reasonable amount, the reduction will necessarily apply to all lines. The people along such lines with the higher rates will welcome a reduction in taxes so as to enjoy the lower rates. Such a measure as this might have a tendency to relieve the general public of their tax burden by reducing the profligate expenditure of money in many ways, chiefly by a healthy reduction of the political patronage list. It would not be a difficult matter to select the lines in financial distress and with a heavy tax burden. The matter of rates between competitive points could be disposed of by applying the increase to all lines, and that would very probably tend to hasten the tax reduction.

Few people know what the taxes paid by the railroads amount to and very few realize that the people really pay the taxes imposed on the railroads, and in the form of the rates allowed them. The suggested proposition if put into effect would bring to the public a realization that they pay the railroad taxes, and the following example will give an idea of the amount imposed: This line is not one of the heaviest taxed. A certain railroad has in one county a mileage of 30.19, with an assessed valuation of \$905,700. It paid state and county taxes in that county in 1929 to the amount of \$39,107. City and separate school district taxes brought the total amount in the county to \$48,409. The assessment is something like reproduction-in-kind cost. The unearned increment would require a very high valuation in order to justify even a much smaller assessment if equitably assessed with other property. The book value of this railroad may be something quite different from the value based on reproduction cost but it would in no way justify the assessment.

There are other troubles that could be corrected. There has lately been some public reference to the millions of dollars

given the railroads since the war and to the fact that the railroads have been beneficiaries of the Government in many ways, but there has been little or nothing said concerning the heritages left the railroads after Government control. From the passage of the Adamson law to March, 1921, it was a history making epoch for the railroads that cannot be left out of consideration. There is something wrong when the average commodity freight rate of some 12 or 15 years ago has been increased to what it is today and still the railroads are not making money. Little has been said about the operating costs and the regulations that vex the souls of railroads. In a letter in the MANUFACTURERS RECORD, December 18, L. F. Loree made mention of many regulations to increase operating costs without service rendered. In an effort to keep pace with the constantly increasing costs it has been necessary to increase rates and effect economies of operation. A chief economy has been the greater revenue tons per train, which from 1916 to 1929 increased about 33 per cent. This might have been very well but for the fact that the ratio of operating expenses to income increased in the same period from about 65 per cent to 72 per cent. This 7 per cent increase, in 1929, reduced the net income of class 1 railroads about half a billion dollars.

From another point of view, try to visualize what will happen if the railroads are forced to continue the use of red ink in their balance sheets, i. e., showing deficits instead of net earnings. From 1920 to 1928 there were some 377,000 employees dropped from the railroad payrolls, nearly 50,000 a year. But that is not the worst. In July, 1930, there were 213,085 fewer employees on railroads than in July, 1929. Rather a dismal outlook from the employee's viewpoint unless it is changed.

The commodity that railroads have for sale is transportation. Consider some unit costs of this commodity and make some comparisons. Compare the train mile cost of some 12 or 15 years ago with that of today, or compare the average commodity rate of the same period with that of today. When the freight on a good grade of coal for a distance of some 60 or 70 miles is more than the cost of the coal it does not look like encour-

agement for that kind of railroad traffic. Passenger fares of the former period were 2 cents or less per mile and today about 4 cents. This of course varies, being 3.6 cents plus 50 per cent surcharge on Pullman fares. In some cases it will exceed 4 cents. The fact that the rates per passenger mile received by the railroads is somewhat less (due to some excursion rates) does not particularly matter as the rates quoted are the potentially psychological rates; that is, they were the rates for the possible passengers that the railroads didn't get and it is the business the railroads lost that we are most concerned with now. High rates have done perhaps more than any other one thing to discourage both freight and passenger traffic on railroads and to encourage bus and truck transportation and pipe line construction.

The thing to be accomplished is to save the railroads and to save them privately owned. Every one should be interested in the solution of this matter. The railroads practically made the development of the United States what it is today and in order to preserve and continue that development it is essential to preserve the privately owned railroads.

Will consolidation help the matter? This is largely theoretical but the railroads have passed the theoretical stage. There would be some small economies effected by consolidation, such as unification of terminals, which could be done anyhow, fewer clerks at terminals for checking and rebilling freight, etc., but these small gains would be overwhelmingly lost in the many disadvantages incident to mergers. Also, merging may prove a step toward socialism unless we can turn back from Government ownership. The matter of putting the railroads in better shape for financing by mergers, which has been mentioned by some advocates of consolidations, is of no advantage as far as rates and service are concerned. As a matter of fact what is wrong with the service? Why isn't it satisfactory? It is good as to quality and 100 per cent as to volume. Have any lines not been able to handle promptly all the business offered? If they couldn't, consolidations would not help the matter. That condition would require additional tracks or additional lines of road. If the service is all right, consolidations are not needed. If the rates are too high, how will mergers help the matter? It will not reduce train resistance, since the ruling grades are unaffected. It will not increase draw bar pull nor will it decrease fuel consumption. These are the things, notwithstanding increased rates, that have really enabled the railroads to keep their heads above water for the past few decades, and unless they had used such

means they would have been sunk long ago by constantly mounting operating costs. If it cannot be shown that it is in the public interest, or makes for economy in railroad operation, why the merger? Really, at this time some segregations would be more fitting than mergers.

Doubtless there is not a railroad in the United States that could not be entirely out of financial distress if accorded fair treatment, if properly and honestly operated. This is not to be taken as a reflection on the operation of the railroads as American talent in railroading stands without peer and the personnel of the management is as a rule of high integrity.

To contemplate scrapping some lines is not economically sound and should not be considered. The best that might be hoped for probably would be cancellation of the division of rates in favor of the larger lines, but it would have the effect not only of stopping the development but largely of destroying development that had already taken place, thus reducing the tonnage otherwise available for the larger roads. And it would certainly be unfair to the communities traversed by such roads.

That something must be done we all know, and while no scheme for solving the matter has been presented that has anything like universal approval, either by the public or other interests concerned, yet the discussions presented in the MANUFACTURERS RECORD and other publications may bring us ultimately to a sound conclusion.

\$1,200,000 Rail Project

Fort Spring, W. Va.—The Chesapeake & Ohio Railway Company, C. W. Johns, chief engineer, Richmond, Va., has awarded contract to Boxley Brothers Company, Orange, Va., for line revision work near Fort Spring, to cost about \$1,200,000. Construction will include a double track tunnel, 2160 feet long; a single track tunnel, 1000 feet long, and a bridge across the Greenbrier River. The Boxley company is at present working on a tunnel for the C. & O. at Price, W. Va.

\$1,000,000 Paper Plant Addition

Fredericksburg, Va.—The Sylvania Industrial Corporation, with executive and sales offices at 122 East 42nd street, New York, has begun the construction of a \$1,000,000 addition to its big plant here for the production of "Sylphrap," a transparent cellulose paper. H. H. Replogle is vice-president of the company.

Building Diesel-Electric Dredge

St. Louis, Mo.—The Sternberg Dredging Company of this city is one of the latest inland ship-owners to apply electric drive to its vessels. The Nashville Bridge Company of Nashville, Tenn., is now building for the Sternberg company a 150-foot combination hydraulic and clamshell dredge of the tunnel stern propeller type, to be self-propelled by Diesel-electric drive. This company now has a number of dredges in service, including an electric dredge operated by shore power, but the new vessel will be the first to be electrically propelled. Electric equipment, both for propulsion and auxiliaries, is being built by the General Electric Company, Schenectady, N. Y., and the dredge is expected to be completed this summer.

Two Busch-Sulzer Diesel engines will supply power, each driving a 1000-kilowatt a-c generator rated 2300 volts, 3 phase, 60 cycles, with direct connected exciters. The two propellers will be driven by 300-horsepower, 600 r.p.m. motors, using belt drive, and the main dredging pump will be driven by a 1600-horsepower, 360 r.p.m., 2000-volt, adjustable speed, wound-rotor motor of the same type and mounted on the dredge ladder. The clamshell will be powered by a 200-horsepower, series-wound hoist motor, a 100-horsepower shunt-wound swing motor, both direct current, and a 50-horsepower tagline motor. The swing motor will be used to swing the dredge when operating hydraulically. Direct current for the d-c. motors will be supplied by a 400-horsepower motor generator set with individual generators for the hoist and swing motions, to give variable-voltage control and special drooping characteristics similar to those of electric shovels on land. Other equipment will include two forward and two aft motor-driven spud hoists, auxiliaries and lighting facilities.

Clamshell machinery is being supplied by the Marion Steam Shovel Company, Marion, Ohio, and hydraulic machinery by the Bucyrus-Erie Company, South Milwaukee, Wis.

\$5,000,000 Beaumont Construction

Beaumont, Tex.—As indicated by a survey, construction projects estimated to cost more than \$5,000,000 are scheduled to get under way in Beaumont within the next year, exclusive of residences and repairs. Important construction will include the Southern Pacific viaduct, to cost about \$3,500,000; new postoffice building to cost \$500,000, and \$100,000 worth of improvements to the South Texas State Fair buildings.

Home Building Needs

WHILE I believe that the situation in the building industry will shortly improve, there are numerous reforms the industry itself must initiate to hasten a return of normal conditions and to stabilize the industry.

Except in isolated instances, the building of low-cost houses has not been undertaken in a sound, economical or scientific manner. As a general rule, such dwellings have been built cheaply—not by careful planning and honest construction methods, but by the use of low grades of material and incompetent labor, resulting in early obsolescence, constant repairing, and necessarily a high annual cost for upkeep, all tending to make this type of investment undesirable to the individual purchaser as well as to financial interests. Cases too numerous to mention may be found in every locality where deterioration has exacted a heavy toll for repairs before payments have been completed. The purchaser with little or nothing to guide him, no standards by which to judge quality, has invested his savings in a house only to find to his sorrow that his investment is unstable and the financing unsound.

Careful Planning Insures Long Life for Nation's Business Structures

With our larger structures this condition does not exist. Here the best talent is employed and careful study is concentrated upon every feature of the planning and construction and the intelligent use of proper materials, in order to insure minimum repair costs and long life. Building codes are drafted for the safety of these structures, and every safeguard essential to their proper construction is developed; their sanitary, heating and ventilating features are designed by experts and properly prescribed and inspected by law, and we point with pride to the beauty and convenience resulting.

Before we can show an equal feeling of pride in the results obtained in low-cost dwellings we must assume an equal degree of responsibility. Not only must municipal authorities surround this class of buildings with a stricter code and de-

By
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Director,
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In this article Mr. Furbringer emphasizes the necessity of devoting to the construction of dwellings the same careful attention that has been given to problems of permanence in construction of great office buildings and other public and semi-public structures.

velop a more careful system of inspection, but what is more vital and of more immediate necessity, is the assumption of this responsibility by the industry itself.

Industry Should Foster Adoption of Regulatory Measures

Some units of the industry now assure the builder or the investor of the compliance with the minimum essentials necessary to safeguard his interests, as for example, by certified heating or by the inspection of wiring; and lumber concerns are stamping the grades on their products. But these are only isolated instances, and offer no guarantees as to the structure in its entirety. The industry owes it to itself, as well as to those it serves, to correct existing evils, and until this is done we cannot expect a return to normal conditions. The radio interests found it imperative to have a

commission with regulatory power; the movie concerns as a group appointed a dictator; and even in the field of sport a commissioner of baseball holds forth, all at the demand of these respective groups.

If prosperity in the building industry is to endure it must come as a result of some form of regulation. The folly of using incompetent labor and cheap materials must be impressed on the prospective purchaser so he will not plead ignorance when he finds his investment hastening to obsolescence.

It is true we have known that these conditions existed. That we allowed them to continue is certainly not to our credit. When the depression came upon us and we had time for reflection, thought was directed toward the reasons which brought these conditions about, and now we agree, at least in theory, that corrective steps must be taken, and the industry is responding to this appeal.

Mortgage companies now closely scrutinize the applications for loans; architects and builders are carefully studying the requirements of low-cost homes; manufacturers are devoting their best efforts to producing lasting materials economically, and labor is contributing its share to reducing costs by increased efficiency.

Revival of Home-Building Seen As Way Out of Depression

When these facts are fully understood and accepted by the public, when investments are protected, as they must be, by safeguards evolved and developed by the building industry, a decided upturn in construction of this class of property will be apparent, and building work will again go forward in volume. Revival of the building industry is a way out of the present slump. The depression will disappear when the construction program of the Federal Government is in full swing, as it soon will be, coupled with that of states, municipalities and private institutions, and construction of dwellings will follow as a natural sequence.

Adjustment to new conditions is rapidly taking place. Idle funds will be directed to their proper channels where they will not only be safe, but will bring back to this nation communities of home builders and home owners.

Foreign Trade Through Southern Ports

FOR the fiscal year ending June 30, 1930, the volume of foreign trade through Southern ports amounted to 33,883,000 tons, according to preliminary figures compiled especially for the MANUFACTURERS RECORD by the Bureau of Research, United States Shipping Board. This was a gain of 100,000 tons compared with the previous fiscal year, as contrasted with a decline of 6,800,000 tons handled by ports outside the South during the same period. Total volume of foreign trade for all United States ports for the year ending June 30, 1930, was 102,962,000 tons, as compared with 109,605,000 tons for the previous fiscal period.

Nearly one-third of the foreign trade tonnage passes through the ports of the South. Of all the geographic divisions of the country the South ranks first in export and second in import tonnage, the Middle Atlantic States, including the port of New York, being first in import tonnage and second in exports. Of the individual states Maryland, ranking second in the United States, led the South

in the volume of imports and Texas, ranking third in the United States, led the South in exports. The next highest state in the South was Louisiana, ranking fourth in the country's import tonnage and fifth in export tonnage.

Based on the annual report of the Bureau of Foreign and Domestic Commerce, the aggregate value of the foreign commerce of the United States for the calendar year 1930 was \$6,904,000,000, as compared with \$9,640,000,000 in 1929, a decline of \$2,736,000,000. The South in 1930 handled through its ports \$1,575,000,000 of foreign commerce, as compared with \$2,082,000,000 the year before, or a decrease of \$507,000,000. The value of merchandise shipped through Southern ports to foreign lands in 1930 amounted to \$1,181,000,000, a decrease of \$403,000,000 compared with 1929. Imports through Southern ports in 1930 were valued at \$393,000,000, a decline of \$103,000,000 compared with 1929. Measured over a term of years however, the foreign trade through Southern ports has greatly increased. Twenty years ago

the value of Southern exports was \$628,000,000, and imports through the South amounted to only \$128,000,000. Since 1900 the South has more than doubled its exports and its imports have increased seven times.

Since Houston has become an important seaport and the leading cotton exporting center of the country, the Galveston district of Texas, including Houston, leads the entire South in the value of shipments to foreign countries. The value of exports from Houston alone in 1930 was \$251,000,000, topping all Southern ports, followed by New Orleans with exports valued at \$233,000,000. With \$135,000,000 of imports, New Orleans led the South, and Baltimore, with imports of \$102,000,000, was second of all Southern ports. In the aggregate value of exports and imports in 1930, New Orleans led the South with \$369,000,000 and Houston was second with nearly \$263,000,000.

VOLUME OF IMPORTS AND EXPORTS BY STATES AND GEOGRAPHIC DIVISIONS
(Fiscal Year Ended June 30, 1930)

States and Geographic Divisions:	Imports		Exports	
	Tons	Rank	Tons	Rank
Maine	850,706	12	75,253	21
Massachusetts	3,559,973	5	245,472	18
New Hampshire	64,115	25	71	27
Rhode Island	678,641	14	2,762	25
Connecticut	57,804	26
Vermont	1,121	29
New England States.....	5,212,360	3	323,558	5
New York	18,397,312	1	11,097,652	1
New Jersey	9,787	27	6,067	24
Pennsylvania	4,542,013	3	2,201,142	8
Delaware	428,943	17	1,918	26
Middle Atlantic States.....	23,378,055	1	13,306,779	2
Maryland	6,136,681	2	1,064,867	11
District of Columbia.....	585	30
Virginia	731,950	13	2,464,406	7
North Carolina	204,135	20	18,320	23
South Carolina	417,420	18	202,735	19
Georgia	439,922	15	379,994	15
Florida	1,054,323	10	2,086,652	9
Alabama	433,409	16	543,275	14
Mississippi	84,668	24	263,976	16
Louisiana	3,632,264	4	4,615,619	5
Texas	1,017,145	11	8,091,700	3
Southern States	14,151,902	2	19,731,544	1
Ohio	1,177,777	8	4,697,756	4
Indiana	2,421	28	48,442	22
Illinois	280,983	19	129,255	20
Wisconsin	162,516	21	1,022,419	12
Minnesota	89,615	23	247,214	17
Michigan	1,760,902	7	809,015	13
Middle Western States.....	3,474,214	4	6,954,101	4
California	1,887,109	6	9,086,136	2
Oregon	114,752	22	1,661,544	10
Washington	1,172,520	9	2,507,690	6
Pacific States	3,174,381	5	13,255,370	2
Total United States.....	49,390,912	..	53,571,352	..

Preliminary figures compiled by the United States Shipping Board, Bureau of Research.

Florida's Forest Land Problem

Tallahassee, Fla.—The Florida Forest Service announces the publication and free distribution of a bulletin by J. J. Goulden, Assistant State Forester, on Florida's Forest Land Problem, with special reference to forest income and taxes. Subjects treated include the following: The Upward Trend of Tax Delinquency in Florida; Forest Land Incomes and the Weight of Taxation on Them, in Four Florida, One Alabama and One Georgia Counties; Ratios of Assessed Value to Sale Value on Forest Land; Average Taxes Paid on Forest Land Properties; Unimproved Land Taxes on South Georgia Forest Counties.

Richmond Harbor Work

Richmond, Va.—The City Commission has engaged John Francis Coleman, New Orleans, La., as consulting engineer on the river and harbor development of Richmond, for which the commission has \$365,000 available, according to R. Keith Compton, director of public works. Mr. Coleman, who has served as consulting engineer on many important river and harbor projects in the South, will soon confer with officials of the department of public works and the port commission

to advance plans for the work. Appropriations for city harbor work, which is being carried on in advance of the federal work, include \$65,000 for removal of a coffer dam; \$250,000 for improvements to the harbor, and \$50,000 for the employment of a consulting engineer, a detailed economic survey of tonnage possibilities and survey work in connection with a deep water terminal.

Old Age Pensions

A revealing light is shed on the much-discussed question of old-age pensions by a monograph report issued under the title, "The Support of the Aged," by the National Industrial Conference Board, New York. The report analyzes problem of old-age dependency and proposed remedies. The facts presented show that "there is comparatively little old-age dependency of such a nature as to call for state action. While 12 states at the end of 1930 had old-age pension laws on their statute books, payments under these laws are so small as hardly to deserve the name of pensions. They are mere pittance, and in several of the states the laws are almost dead letters simply from the fact that the public has no desire to take advantage of them."

The problem of old-age dependency is restricted to those who have been unable to make necessary provision for financial security and who also have no family or other private means of support. The analysis by the Conference Board of the effect of changing economic conditions on the ability of the individual to provide for old age "furnishes no ground for believing that social dependency of this character has increased, or that the individual has through changed circumstances been relieved of the duty of self-support. Through a long period of years wages have increased more rapidly than the cost of living, and the general economic status of wage earners does not justify any assumption of lessened opportunity for individual thrift. As a matter of fact, savings in various forms open to people of small means have shown a marked increase." The report continues:

"Among various measures intended to provide security for the aged, the most significant are those developed by private industry. Industrial pensions have a wider coverage than any of the other pension systems, but they are primarily significant because they apply to that class of individuals which may reasonably be expected to contribute the largest proportion of social dependents. Old age makes greater inroads upon physical than upon mental capacity for work. The policies that have been inaugurated by employers in order to insure their employees against loss of earning power, including not only industrial pension systems but other measures intended to

provide financial security, are, therefore, of particular importance in relation to the problem of social dependency."

In conclusion the report points out that while old age pension laws in the

United States correspond in many particulars with similar legislation in Europe the main difference is that the latter are a part of a general plan of social insurance.

"But, Boy, I Had to Dig"

(From the Detroit Drug Journal)

S AID the little red rooster: "Believe me, things are tough.

Seems that worms are scarcer, and I cannot find enough;

What's become of all those fat ones is a mystery to me,

There were thousands through that rainy spell—but now where can they be?"

Then the old black hen who heard him, didn't grumble or complain—

She had gone through lots of dry spells, she had lived through floods and rain.

So she flew up on the grindstone, and she gave her claws a whet,

As she said: "I've never seen the time there weren't worms to get."

She picked a new and undug spot; the earth was hard and firm.

The little rooster jeered: "New ground! That's no place for a worm."

The old black hen just spread her feet—she dug both fast and free.

"I must go to the worms," she said: "the worms won't come to me."

The rooster vainly spent his day, through habit, by the ways

Where fat, round worms had passed in squads back in the rainy days.

When nightfall found him supperless, he growled in accents rough:

"I'm hungry as a fowl can be. Conditions sure are tough."

He turned then to the old black hen, and said: "It's worse with you;

For you're not only hungry, but must be tired, too.

I rested while I watched for worms, so I feel fairly perk.

But how are you? Without worms, too, and after all that work?"

The old black hen hopped to her perch and dropped her eyes to sleep

And murmured in a drowsy tone, "Young man, hear this and weep:

I'm full of worms and happy, for I've eaten like a pig:

The worms are there as always—but, boy, I had to dig!"

\$1,500,000 Annually to Promote Use of Lumber

Trade Extension Campaign for Lumber to Continue

AT the recent annual meeting in Chicago of the National Lumber Manufacturers Association, the board of directors voted to continue the national trade extension campaign for lumber and lumber products and at the same time approved a new trade extension campaign designated, "Making Lumber Promotion Permanent." This plan calls for a maximum annual expenditure of \$1,500,000.

Raymond B. White, Kansas City, Mo., chairman of the trade extension committee, presented its report to the directors, while W. F. Shaw, trade extension manager, presented the proposed plan to the general session of the association. President A. C. Dixon delivered his annual address and Wilson Compton, secretary and manager, presented his annual report and address entitled "The Lumber Industry at the Cross Roads." Ripley Bowman, secretary of the United States Timber Conservation Board, addressed the meeting in the interest of the board and pointed out its significance to the lumber industry. The Russian lumber imports problem was discussed by Mr. Compton, who reviewed the fight the association has made against them.

A feature of the recent convention was a joint meeting of directors and manufacturers with directors of the National Retail Lumber Dealers Association. A. J. Hager, Lansing, Mich., president of the retail dealers association, presided at the joint meeting, making a vigorous appeal for co-operation between manufacturers and retailers. Other speakers at this session included Harry T. Kendall, Kansas City, Mo.; Vernon Hawkins, Boston; L. P. Lewin, past president of the National Retail Lumber Dealers Association; Charles M. Hines, Chicago; George W. LaPointe, Jr., Menomonee, Wis.; C. C. Sheppard, of the Southern Pine Association; John Dower and Major E. G. Griggs, Tacoma, Wash. Manufacturers voted endorsement of the code of lumber trade practice and principles of lumber distribution, submitted by Harry Kendall, chairman of the trade practice committee.

Alexander Legge, former chairman of the Federal Farm Board, speaking on the occasion of the annual dinner, urged lumbermen to cultivate the farm market by means of the installment plan of selling and advocated storage buildings

for grain farms. In addition to the report of the Trade Extension Committee recommending a continuation of the work on an enlarged scale, reports were also received from the Credit Corporation and Inter-Insurance Exchange. Resolutions were adopted commending President Hoover for the appointment of the United States Timber Conservation Board and urging cooperation with it. In another resolution the Executive Committee was requested to consider the matter of cooperation between regional associations and manufacturers, with a view to agreement on species and grade for lumber to be recommended for specific uses, etc.

Officers were re-elected as follows: A. C. Dixon, Eugene, Ore., president; W. M. Ritter, Washington, D. C., vice-president and treasurer; E. A. Frost, Shreveport, La., and R. B. White, Kansas City, Mo., vice-presidents, and Wilson Compton, Washington, secretary and treasurer.

Electric Power Demand Increased in East Texas

[From Port Arthur News]

Petroleum is a wonder worker. For 100 years East Texas failed to capture a big place in the sun—or on the map. Census takers reported a decreased population. Then rich petroleum fields were brought in and now East Texas is nationally as well as internationally known as a producer of mineral wealth. President James C. Kennedy of the Central and Southwest Utilities Company of Chicago says that demand for electric power in the new East Texas oil field had increased 60 per cent in the first 11 days of April. Sen. Julian Greer says that the growth of population has been tremendous. Harry F. Sinclair says that the potential wealth of the recently discovered diggings is staggering to the mind. As a sidelight, 61,000,000 barrels of oil were exported from South American countries to the shores of the United States in a single year. Now a high authority says that it had been hoped to have gasoline stocks in the United States reduced to 40,000,000 barrels on April 1 but the supply now exceeds 46,000,000 barrels. Domestic demand for the year is estimated at 222,800,000 barrels or 1.5 per cent more than the demand of 219,589,000 barrels a year ago.



They Believe in Wearing Cotton

This group of young women of Baylor University at Waco, Texas, are sponsoring among Texas co-eds the wearing of cotton dresses instead of silk or other more expensive fabrics. It is announced from Waco that this effort to increase the demand for cotton goods is responsible for the fact that more cotton dresses are being worn today on the Baylor University campus than at any previous time in the history of the institution.

Features of the Chemical Show

IMPRESSIVE illustration of the important position that chemistry has attained in American industrial and economic development, particularly in the South, was presented at the Exposition of Chemical Industries, held throughout last week in New York at the Grand Central Palace. So remarkable were some of the feats performed through the medium of recent inventions that they well might have been presented as numbers in a stage or parlor entertainment.

More than 450 exhibits disclosed the findings of research in the field of chemical industry—new discoveries and inventions, virtually all of practical value in manufacturing, agricultural and other industries. The display of chemical apparatus was comprehensive and ranged from small instruments which manipulate tiny shafts of light to great machines designed to reduce heavy materials to finely powdered dust. New specialties were shown in plastics, in metal alloys and fertilizers, with substitutes for glass and containers for food products.

New products derived from coal and tar were presented by the Koppers Research Corporation, including Lumino, an aluminum paint having a processed tar base. Thylox sulphur soap, as shown, is made from sulphur recovered in the purification of gas, and flotation wettable sulphur dust was a new product for agricultural spray purposes.

A recent development of value to the fertilizer industry and the farmer was a cheap process of combining two important plant foods into a drillable fertilizer by spraying superphosphate with ammonia, demonstrated by the Bureau of Chemistry and Soils. In the apparatus shown, anhydrous ammonia, contained in a small steel cylinder under a pressure of 150 pounds, is released, by a reducing valve, in gaseous form for absorption by the superphosphate, which is visible in a revolving glass drum. The ammoniation of superphosphate is accomplished in one step and sufficient ammonia is added to correspond with $1\frac{1}{2}$ to 2 per cent of the superphosphate.

New products in paints and varnishes were shown by the Bakelite Company, which featured its new resinoids for quick, durable, air-dry finishes. Besides use for houses and other structures, these were said to be applicable to rail-

road and marine equipment, and for automotive and aviation apparatus.

In the exhibit of the General Electric Company, W. A. Gluesing performed a number of remarkable "tricks" in demonstration of the ingenuity of some of its latest practical devices. An "electric eye" started a motor-driven blower, and a photo-electric cell caused black golf balls to roll in one direction and white balls in another, at the same time counting them by means of an odometer. Electric lights at a distance were lighted and extinguished by a "magic wand," and their glow regulated, and radio was broadcast in visible colors instead of audible sound.

Dozens of specimens of the wealth of raw materials and minerals which exist in the five states served by the Norfolk and Western Railway, and the finished products of chemical industries in the territory were displayed by the railroad. The exhibit contained approximately 160 specimens; minerals in the raw state, many of which through creative research in chemistry have found their place in industry; others which await commercial exploitation; semi-finished products that come from some of the largest chemical plants in the world, located along the line of the railroad. The subjects treated ranged all the way from coal and its by-products to dyes, paint pigments, viscose (artificial silk), building material and paper. A feature of the exhibit was two huge charts, which showed graphically the hundreds of by-products derived from coal and the cotton plant.

The conversion of cottonseed, once considered valueless, into salad oil and substitutes for lard and soap was described by Dr. Arthur D. Little, who estimated the value of cottonseed products now at \$150,000,000 a year. Cotton linters, he added, are synthesized into celluloid, lacquers, automobile finishes, talking picture films and artificial silk.

Interest by automobile manufacturers in cellulose acetate sheets for lamination with ordinary glass in windshields was reported by representatives of the Eastman Kodak Company. The glare from automobile lights at night is said to be absorbed or deflected by the placing of acetate sheets between two ordinary glass layers, and the dangers of night driving are reduced.

Adaptations of phenolic molding com-

pounds were shown by General Plastics, Inc., with the Durez exhibit, and new examples of the use of Durez for packaging. In this exhibit also were a sand and core binder, for foundry use, and reactive oil-soluble resins for air-drying varnishes, baking varnishes and lacquers.

In observance of its centennial anniversary, the Philadelphia Quartz Company exhibited numerous brands of silicates of soda and its newest product, Metso, sodium metasilicate.

Phases of Department of Agriculture work on insecticides were shown, with demonstrations on the clarification of honey and on commercial uses of chlorophyll. The Bureau of Chemistry and Soils is investigating the chemical possibilities of varieties of roots, herbs and bulbs used by American Indians.

Artificial ripening of green fruits and vegetables with ethylene gas, three times as rapidly as by sunlight, also was demonstrated.

Atlanta Firm Has Levee Contract

Memphis, Tenn.—A contract recently received by the Brooks-Callaway Co., Atlanta, Ga., at Lake Comorant, Miss., calls for new levee construction involving about 2,550,000 cubic yards of earth. The firm will use an 8-yard Diesel electric Bucyrus-Erie drag line, a 2-yard steam Bucyrus-Erie drag line, and a 12-yard electric tower excavator as the major equipment.

The firm is completing an 800,000 cubic yard job of levee construction at Gould, Ark., on which it used an 8-yard Diesel electric Bucyrus-Erie drag line and a 2-yard Bucyrus-Erie steam drag line.

Gasoline From Coal

After years of secret laboratory work, the British Government and private chemists have concluded that it is possible to manufacture high quality gasoline from coal on a commercial basis, William F. Doty, American Consul at Newcastle-on-Tyne, reports to the Department of Commerce. Marketing of such oil is seriously contemplated, he adds. It has been suggested that English and Scotch collieries might combine in developing an oil-producing distillery, to help the coal industry.

A New Discovery in Making Glass

Methods Developed May Have Wide Significance and Lead to Birmingham District Becoming "A Great Glass Manufacturing Center"

By P. O. DAVIS, Auburn, Ala.

AN important discovery concerning the manufacture of glass has been made in the research chemical laboratories of the Alabama Polytechnic Institute at Auburn: Different types of glass may be made from Alabama sand and the granulated basic slag taken from blast furnaces such as those in the Birmingham district.

The discovery was made by Dr. C. A. Basore who, two years ago, produced fuel briquettes from saw dust and who recently announced completion of a laboratory method for manufacture of decolorizing carbon from the residue of cottonseed hulls after xylose is removed.

Dr. Basore, in his work, has made different types of glass on a laboratory scale and the best conditions for making the various types are being developed in this laboratory. Preliminary indications are that these types have unusual elasticity and high tensile strength. The simplicity of the method and the apparent high quality of the glass indicates that it will not be difficult to manufacture on a large scale.

One type of glass made by Dr. Basore apparently has excellent insulating qualities. His laboratory work indicates that it is the cheapest type he has made, whereas much insulating glass on the market is more expensive than other glass. Another type is either transparent or semi-transparent. It apparently possesses qualities required of glass for the manufacture of bottles and for similar purposes. Several types of colored glasses suitable for various glass products have been produced. Others appear to have qualities required for glazes and enamels.

Dr. Basore thinks it probable that slag, as well as the heat that it contains when it leaves the furnace, may be used in the manufacture of glass by adding sand and carrying it a step further. At present the slag is discarded and the heat it contains as it leaves the furnace is lost. However, it is necessary to anneal the glass. Investigations have convinced Dr. Basore that there is an abundance of sand in Alabama suitable for manufacture of glass by the process

he has developed. And slag is abundant, for 40 to 75 per cent of the total charge of a blast furnace becomes slag.

One reason why Alabama has not developed glass manufacturing is that Alabama sand was considered unsuited. Official geological surveys, so far as is known, do not list any glass sands in the State.

After checking and rechecking the methods he has utilized and studying the factors involved, Dr. Basore sees "no reason why the Birmingham district should not become a great glass manufacturing center." Pittsburgh is the glass center of the country because it has the raw products and fuel for the manufacture of glass. Natural gas, now

available in Alabama, is used as fuel. Dr. Basore pointed out, however, that heat requirements in Alabama will be reduced if hot slag is taken as it comes from blast furnaces.

\$768,000 for County Work

Clarendon, Va.—A budget for the fiscal year beginning July 1, 1931, and calling for an outlay of \$768,778, has been adopted by the Arlington County Board of Supervisors. Major expenditures will be for schools and roads, the former estimated to require \$308,176 and the latter \$258,176.

\$560,000,000 Value Alabama Manufactured Products

According to the 1930 census, the factory output of Alabama was \$560,974,000 in 1929. The number of establishments reporting was 2848; number of salaried officers and employes, 10,471; number of wage earners (average for the year), 120,064; salaries paid, \$24,605,914; wages, \$102,040,108; cost of materials, \$258,071,969; cost of fuel and purchased

electric energy, \$41,447,011; value added by manufacture (value of products less cost of materials, fuel, and purchased electric energy), \$261,455,660; horsepower (rated capacity) of prime movers, 401,316; horsepower of electric motors driven by purchased energy, 382,939.

The following table gives summary figures for Alabama and for cities having 10,000 inhabitants or more:

SUMMARY FOR ALABAMA

	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, fuel and purchased electric energy	Value of products	Horsepower
The State:						
1929	2,848	120,064	\$102,040,108	\$299,518,980	\$560,974,640	784,255
1927	2,355	119,093	105,488,817	317,493,407	550,372,126	779,156
1919	3,654	107,159	99,065,800	300,664,290	492,730,895	628,287
Cities having 10,000 inhabitants or more, 1929:						
Anniston	59	3,348	2,498,191	5,647,916	10,849,193	10,712
Bessemer	22	2,019	2,103,744	4,566,285	9,544,329	5,401
Birmingham	318	18,318	1,505,790	70,910,314	137,101,085	191,704
Dothan	27	367	225,413	1,434,811	2,259,524	3,157
Gadsden	46	2,727	2,297,703	7,269,803	12,245,551	9,685
Mobile	99	4,411	5,217,993	8,213,516	19,302,245	15,024
Montgomery	99	3,350	3,261,952	12,658,439	21,557,523	16,109
Selma	26	1,063	936,879	5,084,884	7,172,182	5,484
Tuscaloosa	27	652	616,781	1,033,139	2,315,060	2,205

Texas Manufactures Increase 45 Per Cent in Value in Ten Years

The phenomenal development of manufacturing in Texas is shown by the 1930 Census figures covering manufacturing activities in 1929. In the latter year the state reported a factory output valued at \$1,449,800,000 as compared with \$999,-

995,000 during 1919, or a gain of 45 per cent in ten years, and a 20 per cent increase as compared with 1927.

In 1929 there were 5187 manufacturing establishments in Texas with 21,168 salaried officers and wage earners. The number of wage earners (average for the year) was 131,503; salaries paid, \$49,245,926; wages, \$147,888,053; cost of materials, \$962,800,442; cost of fuel and purchased electric energy, \$35,131,834; value added by manufacture (value of products less cost of materials, fuel, and purchased electric energy), \$451,869,640; horsepower (rated capacity) of prime movers, 378,611; horsepower of electric motors driven by purchased energy, 452,233.

SUMMARY FOR TEXAS

	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, fuel and purchased electric energy	Value of products	Horsepower
The State:						
1929	5,187	131,503	\$147,888,053	\$997,932,276	\$1,449,801,916	830,844
1927	4,065	116,763	130,408,661	842,927,286	1,206,579,962	635,455
1919	5,724	107,522	116,403,800	701,170,898	999,995,706	440,894
Cities having 10,000 inhabitants or more, 1929:						
Amarillo	46	596	1,166,442	2,460,060	5,442,650	2,842
Austin	88	856	1,074,899	3,287,121	7,066,287	5,624
Beaumont	82	1,768	2,214,642	5,928,558	12,249,157	8,612
Brownsville	29	178	181,586	637,405	1,295,562	1,970
Corpus Christi	36	350	385,412	1,589,722	2,912,145	1,815
Corsicana	27	537	555,632	2,819,159	4,904,388	4,133
Dallas	535	12,082	13,630,181	83,630,618	142,529,820	50,200
Denison	22	576	551,277	2,491,075	3,793,019	4,037
El Paso	149	5,169	5,460,218	13,863,861	24,621,381	15,048
Fort Worth	229	6,771	8,273,495	86,173,022	113,582,214	46,244
Greenville	28	245	222,842	2,607,565	3,469,062	2,818
Houston	429	16,225	20,237,285	79,880,600	144,752,821	63,558
Marshall	22	1,706	1,914,723	3,798,159	7,164,561	7,120
Palestine	22	539	733,469	1,570,598	2,848,862	3,081
Port Arthur	29	290	421,961	1,247,299	2,558,490	2,141
San Antonio	390	8,660	8,261,816	30,573,398	52,884,256	32,919
Sherman	43	721	839,185	9,507,307	12,965,794	6,756
Temple	32	487	645,599	2,178,028	3,696,076	3,120
Texarkana (Tex.)	36	844	887,289	2,592,541	4,667,681	3,442
Tyler	28	611	670,175	2,184,301	3,751,375	3,351
Waco	105	1,809	1,879,839	7,781,071	13,602,285	6,767
Wichita Falls	75	1,476	2,092,555	11,900,677	18,642,929	11,368

Florida Census of Manufactures

The Bureau of the Census announces the following summary statistics for the State of Florida, compiled from data collected at the census taken in 1930, which covered manufacturing activities in 1929: Number of establishments, 2214; number of salaried officers and employees, 6496; number of wage earners (average for the year), 64,936; salaries paid, \$14,101,523; wages, \$54,661,968; cost of materials, \$92,280,812; cost of fuel and purchased electric energy, \$4,821,712; value of products, \$232,912,261; value added

by manufacture (value of products less cost of materials, fuel, and purchased electric energy), \$135,809,737; horsepower (rated capacity) of prime movers, 104,785; horsepower of electric motors driven by purchased energy, 88,741. The number of wage earners and the value of products represent increases of 6.1 per cent and 6.5 per cent, respectively, as compared with 61,219 wage earners and products valued at \$218,790,152 reported for 1927, the last preceding census year.

SUMMARY FOR FLORIDA

	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, fuel and purchased electric energy	Value of products	Horsepower
The State:						
1929	2,214	64,936	\$54,661,968	\$97,102,524	\$232,912,261	193,526
1927	1,912	61,219	56,671,574	91,715,524	218,790,152	177,580
1919	2,582	74,415	67,433,229	92,680,224	213,326,811	139,091
Cities having 10,000 inhabitants or more, 1929:						
Jacksonville	209	6,231	7,182,170	30,512,720	55,178,183	23,823
Miami	170	1,909	2,622,616	3,956,662	12,423,647	10,693
Pensacola	50	1,244	1,692,464	2,343,316	6,061,039	7,092
St. Petersburg	65	502	692,421	1,273,634	3,370,883	6,044
Tampa	241	13,182	13,883,453	20,706,769	53,289,196	21,169

Underwater Bank Grader for River Revetment Work

The Bucyrus-Erie Co., South Milwaukee, Wis., is building a mechanical bank grader for the U. S. Engineer Office, to be used in preparing banks along the Mississippi River to a definite grade and slope for the placement of concrete slab type of revetments, which are designed to prevent bank scour or erosion. The bank grader is essentially a full revolving excavator of the dragline type, in which the boom carries a traveling carriage from which a handle is suspended, upon the end of which a scraper blade is secured. The machine is mounted on a barge. The point of the boom projects landward, and by adjusting its height or angle, and the height or depth of the handle, the scraper blade will cut a definite slope, raking the material toward the river bed as it is pulled from the point of the boom towards the machine. The maximum depth to which the machine will grade is 40 feet, which permits it to grade the under water surface of banks.

The machine now being built is a steam driven unit having a 160-foot boom, 55-foot handle, and a scraper blade 8 feet wide. It has an approximate working weight of 335 tons exclusive of the barge. It is built to be convertible into a 6-yard dragline, and provisions have been made for adding crawler type mountings to make the machine suitable for normal levee building operations.

\$500,000 Federal Building

New Orleans, La.—Moise H. Goldstein of this city has been commissioned to prepare plans and specifications for a \$500,000 federal building and postoffice in New Orleans, according to the Acting Supervising Architect of the Treasury Department, Washington.

LETTERS FROM OUR READERS

Plague of Nostrums

New Orleans, La.

Editor Manufacturers Record:

Your leading article, April 30, carries this question: "When will buying start?" Is it possible to forecast a trend, based on past experience, when we must now deal with factors of the first importance not at all in evidence a few years ago?

The United States has changed from a debtor nation and a large seller of raw materials into a creditor nation and a seller of manufactures, as well as of raw materials. The entire world owes us much money. We possess most of the gold. We have a high tariff which checks sales to us against which credits may be created to be liquidated by our exports. Then, we have such monumental economic stupidities as the Federal Farm Board's policies which, by making our export cotton and wheat unpopular as investments abroad, are literally turning our export markets over to our competitors in a wholesale way.

Low prices are harmful, but temporary. Loss of markets is tragic. So long as such things continue, discussion of the refinements of commerce and trade is largely futile.

Capital as well as labor is largely out of employment. And the pity of it all is that, when one nostrum fails, other nostrums, as bad or worse, are immediately proposed and are apt to be enacted into law, without adequate study and less than adequate knowledge of their economic effects.

Another economic blunder such as the Federal Farm Board, and half our cotton producers will be put out of business.

WALTER PARKER.

Siam Interested in Highway Information

United States Department of Commerce,
Bureau of Foreign and Domestic
Commerce

Bangkok, Siam.

Editor Manufacturers Record:

I have greatly enjoyed the special articles in your Annual Highway Review Number published January 8, and feel sure that some of the highway officials of the Siamese Government will find certain of these articles very helpful.

Highway development in Siam was only begun a few years ago, and even today there are only about 950 miles of improved roads in the entire country. Approximately 7,535 motor units were in use on these highways as of January 1, 1931. With a total area of 200,000 square miles and a population of 11,500,000, the possibilities for highway development in Siam are very great. So far, roads have been built to act as feeders to the railway lines, and this policy has proved very successful. However, the time is rapidly approaching when de-

mand for more roads will be very keen, and we naturally are anxious to place as much information as possible concerning American highways in the hands of the Siamese authorities.

FRANK S. WILLIAMS,
Commercial Attache.

One Way to Secure Business

Swinney & Coleman,
Contractors and Engineers,
Drag Line Construction of
Embankments, Canals, Levees, Etc.
Opelousas, La.

Editor Manufacturers Record:

We read the MANUFACTURERS RECORD religiously and were surprised to see our machines advertised by the Thew Shovel Co. on the back page of your April 2 issue. Please send us four or five extra copies of that issue.

We have ordered another Thew Lorain shovel to add to the two of the same make we are now operating.

We have work signed up to last us until Christmas. This section of Louisiana had no depression. Everyone is working who wants to work.

The information in the MANUFACTURERS RECORD is invaluable to contractors. I read it to keep in touch with new jobs and get most of my information from it.

R. E. SWINNEY.

Private Gas Supply at Low Cost

Burlington, N. J.

Editor Manufacturers Record:

In your recent editorial, "Growth of Processed Foods," you referred to farming becoming more and more a manufacturing problem and that the development of rural gas and electric service offers farmers opportunity to process their products and market them at their source.

Only a few farms are so located that they can take advantage of public utility service. A consumer of gas can buy a machine for making his own gas. He can buy fuel—charcoal or coke—for operating the machine and secure a private supply of gas at actual cost. If he buys fuel right, he will make his gas at a cost of 35 per cent of the customary unit cost of gas. These machines for producing a private gas supply have gone through a 17-year development. Any family or industry can be served anywhere, independent of pipe lines, city franchises, etc. This brings industrial possibilities to many farms and rural communities where power is not available at a competitive price.

Then, too, greater use of charcoal will stimulate business in forest districts by increasing demand for a commodity which has been much neglected.

When people begin supplying their wants at primary competitive prices, they have made the first step in efficiency and in the direction of prosperity.

ALFRED S. PERRY.

Wages and Living Standards

Industrial Bureau

of the Granite City District, Inc.

Granite City, Ill.

Editor Manufacturers Record:

I commend your editorial, April 23, "A Profitable Wage." In discussion about the desirability of maintaining wage levels, it is being continually overlooked, either ignorantly or advisedly, that:

1. All wage rates and salary schedules can be reduced somewhat without lowering the standard of living, because of the decline in living costs, and it may be necessary to make these adjustments generally before we can square away for a real recovery.

2. In certain sheltered trades, particularly the railroad brotherhoods and the building crafts, wage scales are entirely too high and need to be radically readjusted for the good not only of the particular industries and society generally, but also of the men themselves.

Building, both new construction and maintenance, is at a standstill because the mass of the people cannot afford to buy the time of union mechanics at \$1.50 per hour and up. In St. Louis, the electricians have hiked their scale to \$2 an hour. The result? All industries dependent upon building activity continue to languish, while unemployment in the building trades exceeds that in any other line.

It is high time that those in command of the American Federation of Labor realized that theirs is a merchandising problem, to-wit: They must work out wage schedules so as to pull a maximum demand and yield a decent annual return to the craftsmen.

H. F. PORTER,
Managing Director.

A Price Basis

S. R. M. Orum, Inc.,
Cutters, Knives and Heads.

Philadelphia, Pa.

Editor Manufacturers Record:

The following is the substance of a letter we are sending out setting forth a definite objective for industry, which is somewhat along the line of your recent editorial discussion on ruthless price-cutting, below the cost of production:

"Many times a customer comes in with a hard luck story; but do not let your customer tell you how much you should come down in your prices. Use your head on the proposition and not your customer's feelings. Take the peak figures of 1923 and deduct 10, 15 or 20 per cent according to whether your particular industry has progressed in cost reductions 10, 15 or 20 per cent in the last eight years. Quote on that basis and line up your machinery production methods, buying and overhead to meet cost conditions."

S. R. M. ORUM, INC.

IRON, STEEL AND METAL MARKET

Steel Production Now About 46 Per Cent of Capacity

Pittsburgh, May 11—[Special.]—Steel ingot production decreased about 9 per cent from March to April, or slightly more than indicated by estimates made during the month. The official report shows April production at 49.29 per cent of capacity, and production last week may be estimated at about 46 per cent. Since the top rate was reached, just after the middle of March, there have been decreases averaging about $1\frac{1}{2}$ points a week, but further decreases, to the usual midsummer low, are likely to be less, and the low point may be forecast at around 40 per cent. Nothing but a fresh recession in general trade would prevent tonnage from having seasonal increase thereafter, and as gradual improvement in general business is expected instead, there is likelihood of a very substantial improvement in steel for late in the year. This might give the mills a 60 to 65 per cent operating rate, which is the lowest the mills consider at all economical.

Steel prices have not been changing in any marked manner, but in several products the tone of the market is distinctly easier. Thus in bars, shapes and plates no progress is seen towards actual establishment of the 1.70c figure which has been the nominal asking price of mills since April 1, and there are indications that some large construction jobs have involved particularly large concessions on the plain mill material. Wire products are at old prices, buyers being well covered. Sheets are a little easier all around. A formal reduction of 5 per cent has been made on carload lots of pipe ordered by jobbers for direct shipment to customers.

The automobile industry is buying steel in such small lots and for such prompt shipment as to make it doubtful whether this month's automobile production will altogether equal that of April, for which month the preliminary statement shows 231,017 cars and trucks, United States and Canada, or 20 per cent increase over March.

Steel production is now between 15 and 20 per cent under its top rate, about seven weeks ago, and one would suppose that to bring about such a decrease there would be very noticeable decreases in some of the steel consuming industries, but such is not the case. The decrease seems to have been so general as not to stand out prominently in any individual case.

Three orders for line pipe have been

reported in the week, totaling fully 50,000 tons, and making more than a fair week. In general, however, line pipe buying this year has fallen far short of expectations, and chiefly or wholly on account of difficulty in financing. There is no dearth of projects, but rather there has been a plethora, and long ago bankers suggested that some of the projectors should get together and try to get the desired transportation results without laying so many separate lines.

Missouri Pacific has ordered 16,000 tons of rails, its first purchase for the season. Early in November, 1929, it bought 61,000 tons, not all of which was taken out in 1930. Many roads carried over a substantial tonnage and not all of that has been released even now.

At the close of last year the year's total steel ingot production was estimated at 40,000,000 gross tons, the estimate being based on official reports for 11 months of the year from about 95 per cent of the Bessemer and open-hearth capacity, with allowance for producers not reporting and for crucible and electric ingots. The total is now officially reported at 39,595,268 tons. It falls short of the forecast for two reasons, because small companies, not reporting monthly, did not do as well as the large companies that do report monthly, and because electric steel fell off more than other steel. Common everyday steel held up better than special steels. Production last year was 28 per cent under the record, made in 1929, but last year's total is of no significance, as production was engaged in decreasing sharply after February. The present rate is about 10 per cent over the rate in the fourth quarter of the year.

Less Activity in Pipe Manufacture—Machine Shops Are Busy

Birmingham, Ala., May 11—[Special.]—While pig iron production has been maintained right up to the present with no schedule for reduction in the next few days announced, the demand is lagging. Some iron is going to the surplus piles on furnace yards but not to any great extent. There is not a very healthy unfilled tonnage on furnace company books. Base price is being maintained, at \$12 to \$13, No. 2 foundry, while \$11 is being asked, f. o. b. cars at furnaces for iron to be shipped out of the district. Practically no business in the latter list has been reported recently.

Cast iron pressure pipe is not being

manufactured as actively as a few weeks ago and there is not the steady purchasing by these interests. The pipe makers are shipping steadily, not accumulating stock on yards but the readjustment is in line with immediate demands.

Foundries are reporting a little lagging also in their business. Machine shops, on the other hand, are quite active with special castings, machinery of various kinds and other work. Birmingham shops are now producing and shipping machinery and castings of various kinds into Chicago and St. Louis territories. Low prices, it is stated, brought the business to this section as well as the ability to produce splendidly. Smaller foundries, stoves, etc., are using iron in curtailed lots. The small-lot orders for iron are less numerous than a month ago and lots of 500 tons and more are not frequent.

Open-hearth furnace operations continue at the 65 per cent capacity pace. There is still a good demand for sheets and plate, comparatively speaking, and these mills are producing at above 50 per cent capacity. Structural steel fabricating shops have reduced their activity a little, an average of four-to-five days the week operations being announced. A few contracts are reported now and then and shipment on contracts reported since January 1 is showing work still under way. Ingalls Iron Works Co. is sending plate and other shapes in quantity down the Warrior river for the 10 barges being built at Mobile for the Mississippi-Warrior Barge Lines for use on the Warrior river. Virginia Bridge & Iron Company has received contracts on several small bridges for the Louisville & Nashville Railroad, 540 tons of steel made and fabricated here to be used. Bids are in on the steel to be used in remodeling the L. & N. passenger station in Birmingham, necessitated by the elimination of grade-crossings in the heart of the city and also on the steel which will be used in erection of the Veterans hospital at Tuscaloosa, 60 miles southwest of Birmingham. Other work is in sight.

Producers of reinforcing steel, flat steel and contraction joints are still very active as good roads projects are being worked on. The laying of concrete will not take place in its greatest speed until the roadbeds have been developed and settled. It will be toward the end of the year before the peak of consumption of this class of steel as well as the cement will be noted.

The Inland Waterways Corporation is giving the Warrior river barge line at-

tention. U. S. engineers have just completed a tour of inspection on the river and are providing for a Diesel-electric power operation of Lock 17, between Birmingham and Tuscaloosa, to prevent any interference in future with the operation of this double-lift lock; they have boats taking snags out of the river and a dredging boat is working on the channel so there will be navigation through the low water period of the year.

The Tennessee Coal, Iron & Railroad Company has been handling considerable steel down the Warrior recently, operating its own barge service.

PIG IRON

No. 2 foundry, 1.75 to 2.25 per cent silicon, \$12.00 to \$13.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$12.50 to \$13.50; iron of 2.75 to 3.25 per cent silicon, \$13.00 to \$14.00; iron of 3.25 to 3.75 per cent silicon, \$14.50 to \$15.00.

OLD MATERIAL

Steel rails	\$10.00 to \$11.50
Steel axles	14.50 to 15.50
Iron axles	14.50 to 15.00
Heavy melting steel.....	9.50 to 11.00
No. 1 cast.....	10.00 to 10.50
Stove plate	8.50 to 9.00
No. 1 railroad wrought....	8.50 to 9.00
Car wheels	10.00 to 10.50
Machine shop turnings.....	6.50 to 7.00
Cast-iron borings	6.50 to 7.00
Cast-iron borings (chem.)...	12.50 to 13.00
Rails for re-rolling.....	10.25 to 10.75

Metals Slightly More Steady

New York, May 11—[Special.]—Metals prices show a little more steadiness, though it is felt it is about time that they did, with levels of some of the major metals the lowest since the mid-90's. Tin has been rising gradually from its low 22½¢ per pound reached earlier in the week, which compares with 22.60¢ as the bottom of 1902. Copper has not declined during the past several days though a few sales have been made at 9¢ which was the bottom price of 1894, the low of 1893 having been 9½¢. Zinc is more steady at 3.25¢ per pound, East St. Louis, which coincides with the low point of 1896. The lead price coincides with the valley figure of 1921.

Business has been quiet in the main though improved in a few directions. Lead sales have been better following the completion of a slash in price by \$10 per ton in four steps. Lead consumers have shown more confidence and are buying larger quantities than carload lots for the first time in several weeks. Among the large tonnage purchasers have been makers of batteries, pigments and cable.

Sales of copper for export have been increasing moderately. Sales abroad on Wednesday were nearly 1000 tons and largely to Germany. The low prices and the greater steadiness of the market have induced purchasing. The more stable performance of the stock market

at the middle of the week was also a constructive influence on the metals.

Automobile production is being maintained at previous rates in a satisfactory manner and automobile buying of steel has been quite conspicuous in the past few days. This means also a good consumption of the non-ferrous metals in this line. The pace of the steel producers still slips off though the declines are very moderate.

The first April statistics to appear among the American-produced metals pertain to zinc. Surplus stocks increased 1719 tons during the month to 143,212 tons, the first gain since January. Production was 971 tons daily, the smallest in years, but despite this favorable factor shipments fell off even more drastically, thus bringing about an increase in surplus. The highest surplus stocks on record were 145,139 tons at the end of last November.

Copper statistics for April will appear at the middle of this week and a rather unfavorable showing is expected. It is probable that surplus stocks will have increased by at least 15,000 tons, thus partially undoing the good record of the preceding four months. The poor prediction for copper is based largely on the small sales for export during March and April, which probably means that actual shipments abroad were under normal.

Copper prices have been very uncertain and hard to define at times. The domestic price has ranged from 9 to 9½¢ per pound as far as quotable domestic quotations go. Actual sales have been made at 9 to 9¼¢ among the custom smelters though primary producers have not dipped below 9½¢ in honor of the export quotation of 9.80¢. It was rumored on one day early in the week that second hand copper had sold at under 9¢ but this was never proved satisfactorily and will not go into the records because it was not an open price.

A feature of the week was the arrival of two representatives of the principal copper producer in the Belgian Congo who went into conference with Copper Exporters, Inc. It has been hinted that perhaps a further curtailment of production is being arranged, one theory being that only low cost producers would continue to operate.

In the tri-State district the price of lead ore has dropped to \$35 per ton, the lowest in many years. The price of zinc ore remains at \$20 per ton but sales were small, consumers evidently feeling that the zinc price is due for a further reduction. Meanwhile more lead and zinc operations in the tri-State district of Missouri, Oklahoma and Kansas are being curtailed, action which is being taken reluctantly because of the unemployment it causes. The present price of zinc ore coincides with that of 1921,

which was the bottom level for this century.

The state of Arizona is beginning to wage an active campaign for a 6-cent duty on copper. The Governor has called a conference of copper men, bankers, industrialists and agriculturists to plan some official state agitation. They point out that copper from Africa and South America can be laid down at New York at 6 cents per pound, whereas it costs Arizona producers 12 cents—hence the need for a 6-cent duty, they say. Producers in Michigan have also been agitating a duty.

In this connection it is interesting to note that the Roan Antelope Co., in Rhodesia, Africa, started producing copper for the first time on May 1 and at the rate of 10,000 tons a month. Additional copper properties will be operating in 1932 in that region. The financial report of the Kennecott Copper Corporation reveals operating costs of under 7½¢ before depreciation. However so low a cost producer in this country is an exception. Costs of some companies are 10 cents or above.

Air-Conditioned Railroad Train

The first train to be entirely air-cooled and air-purified will be placed in service on the Baltimore and Ohio Railroad about May 20. It is the "Columbian," running between New York, Philadelphia, Baltimore and Washington. All of its equipment, consisting of a smoking lounge car, observation sun-room car, latest type parlor cars, individual seat coaches, and colonial dining car, will be equipped with the air-purifying system.

The apparatus not only regulates the temperature of the air but also controls the humidity and purifies the air, cleansing it of particles of dust, cinders and smoke. The regulation of the temperature is automatically controlled by a thermostat and the apparatus functions both while the train is running and when it is standing still.

The air-conditioning system was first introduced on the railroad in a limited way last summer when the Baltimore & Ohio successfully air-conditioned one of its diners.

Planting Forest Land

Washington, D. C.—More than 21,000 acres of trees were planted in national forests last year by the National Forest Service, according to estimates, and large crews have been sent out to begin planting operations for 1931. Forest officials estimate that more than 25,000 acres will be planted during the current year.

NEW AND IMPROVED EQUIPMENT

The Bonner Railwagon System

For hauling freight in a store-delivery service at a saving in costs, the Bonner Railwagon System has been developed by Col. Joseph C. Bonner of New York. In the opinion of its sponsors, this system will be of marked benefit to the railroads and revolutionize freight hauling operations. As the name suggests, the Railwagon was designed to travel either on a railroad or over a highway, and it acts automatically to transfer from one to the other.

In general outline and operative features, the Railwagon unit resembles a large furniture van, with two basic units—the Railwagon and Undercar—made in various type bodies: The closed, gondola, oil, dairy, refrigerator and other types. It is of all steel construction, with rubber tired road wheels. The unit is produced in standard lengths of 20, 40 and 60 feet. One type is designed to carry loads equal to 20 tons. While the important function of the Railwagon is to serve the railroad and to be moved over its tracks, it is claimed that the only physical equipment a railroad need supply to handle the Undercars and Railwagons at any station is the Bonner Wagonramp, and that its cost of installation and maintenance is inconsiderable.

The first Bonner Railwagons and equipment were built by the American Car & Foundry Company at Cleveland, Ohio. These are now in operation on a daily schedule, between Toledo and Cleveland, on an electric railroad system controlled by Henry L. Doherty & Co., in freight haulage with pick-up and delivery cartage. In New York a comprehensive steam railway model terminal and freight haulage system has been built, showing standard freight and other cars entrain, with Railwagon equipments adapted specifically to heavier or steam railroad operations.

To facilitate farm-to-market operations, Bonner "Totewagons" may be loaded into Railwagon gondola types, in assemblies of five. These bodies are about 7.5 feet long, 3.7 feet wide and 7 feet high, built of aluminum alloy, mounted on truss supported wheels and are movable as other units, by trucks or other means.

Cable for Work Underground

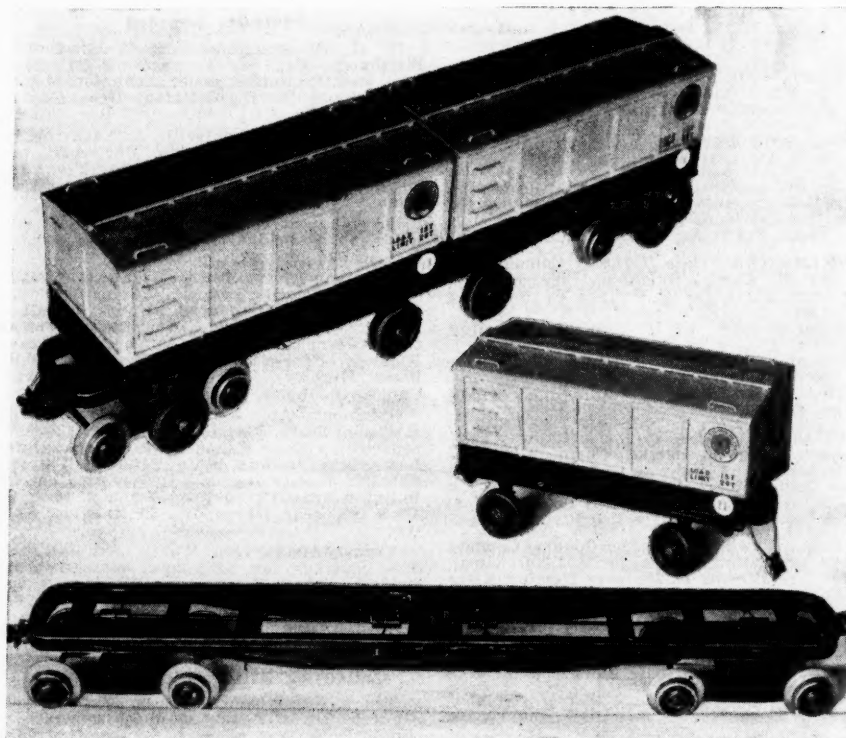
The Okonite Company, Passaic, N. J., announces Okosheath cable for underground work in ducts or for burial directly in the ground. The construction of this cable is described as simple, the

conductor being covered with a single thick sheath of tough rubber compound which provides insulation, excludes moisture, cushions the conductor from impact, resists abrasion and is said to be impervious to the action of chemicals.

Boring Machine for Installing Small Diameter Pipe

The Armeo boring machine, developed by the Armeo Culvert Manufacturers Association, Middletown, Ohio, and field-tested during the past four years, is being extensively utilized for the purpose of quickly installing drainage facilities without interfering with the traveled surface of highways or rail lines. It is designed expressly to install corrugated iron drain pipe in 8, 12 and 18-inch diameters. Traffic is not interrupted while construction is in progress, nor is there an unstable roadbed or marred pavement after the installation, it is said. The machine serves the double function of excavating and removing the material replaced by the pipe.

The entire machine is mounted on a track upon which it is moved forward as jacking progresses, jacking being done by hand at the rear of the machine by means of an especially designed jack operating on a rack between the rails of the track on which the machine moves. Power is provided by a gasoline engine and is transmitted to the "borer" by a shaft extending through the pipe. A spiral conveyor is built around this shaft, which, as it revolves, removes the spoil through the pipe upon a smooth metal trough placed in the invert. When a section of pipe has been placed, the machine is returned to the starting point, another section of pipe and a corresponding length of lining and conveyor attached and the process repeated. This is continued until the required amount of pipe is placed. Although subdrainage installations present the greatest opportunity in the use of the machine, it is said to be applicable for the installation of conduits for gas, water, telephone and electric lines, small drainage openings and other purposes for which small diameter pipe is satisfactory.



Showing Bonner Railwagon Ensemble With Two Basic Units, Railwagon and Undercar

Contract has been awarded by the Constructing Quartermaster, Fort Monroe, Va., to the Townsend Lumber Co., Anderson, S. C., at \$426,500, for the construction of three barrack buildings at Langley Field.

CONSTRUCTION DEPARTMENT and NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ala., Anniston—George Barr, Gov. Engr., reported, started work on construction of drainage system for southern end of Anniston Airport; contract for material let to Booth & Kilby Co.; reported, negotiating for additional land for enlargement of airport.

Ark., Bentonville—C. W. Holderbaum, Airport Engr., 1521 W. 21st St., Little Rock, advises plans for airport indefinite; site not selected; no construction contemplated other than preparation of field for landing. 4-30

Fla., Jacksonville—Dept. of Commerce, Division of Supplies, W. S. Erwin, chief, Washington, D. C., receives bids May 25 for Proposal No. 23000, installing lighting facilities for Jacksonville-Florence section of Jacksonville-Richmond Airway. See Want Section—Bids Asked.

Ga., Atlanta—Eastern Air Transport, Inc., 105 Marietta St., reported, receiving sub-bids on plumbing and heating, built-up roof, metal doors, etc., at Candler Field; will construct additional story to office and shop building; cost about \$8000; day labor.

Ga., Uvalda—City, reported, contemplates establishing airport.

Md., Riverdale—Robey-Lambert Airplane Co., Inc., capital \$50,000, Kenneth A. McRae, Res. Agt., 115 Jefferson Ave. Riverdale.

Mo., Bridgeton—Bd. of Public Service, St. Louis, reported, soon call for bids for grading, shaping field, conc. paving entrances at National Guard and Naval Reserve hangars; tile drainage and paving, and shaping Cold Water Creek Diversion Channel; constructing compensating table at St. Louis Flying Field; cost \$104,400.

N. C., New Bern—New Bern Airport Assn., Inc., capital \$50,000, incorporated; J. H. Parker, 140 Broad St.

Okl., Oklahoma City—City, George F. Brown, City Engr., receiving bids for administration building; cost \$50,000. 4-23

Okl., Tulsa—City's expansion program at municipal airport includes conc. ramp, cost \$8000, additional hangar, cost \$25,000; runway, \$35,000, and administration building cost \$60,000; Smith & Senter, Archt., Phil-tower Bldg., Tulsa. 3-12

Tenn., Cowan—City, reported, plans establishing airport.

Tenn., Kingsport—City, reported, contemplates establishing airport.

Tex., Amarillo—Office of Chief, Div. of Purchase and Sales, Dept. of Commerce, Washington, D. C., receives bids June 2 for installation of lighting facilities on Albuquerque-Amarillo section of Los Angeles-Amarillo Airway. See Want Section—Bids Asked.

Tex., Galveston—J. W. Zempter, 1813 24th St., reported, has contract for fencing, grading, clearing, etc., at municipal airport; bids on other work to be let later. 5-7

Va., Langley Field, Hampton—Constructing Quartermaster, Ft. Monroe, soon call for bids for construction of air corps hangar with annexes, connecting bays, etc.

Bridges, Culverts and Viaducts

Proposed Construction

Arkansas—See Roads, Streets and Paving.

Fla., St. Augustine—City Comsn. approved plans for bridge over San Sebastian River planned by State Road Dept., Robt. W. Bentley, Chmn., Tallahassee.

Ga., Atlanta—Fulton County and City, C. E. Kauffman, Borough Bridge Engr., reached agreement for building \$68,000 Broad St. viaduct; soon call for bids.

Ga., Augusta—Georgia Highway Bd., J. W. Barnett, Chmn., Atlanta, and South Carolina Highway Comm., Columbia, have plans approved by War Dept., Washington, for bridge over Savannah River.

La., Alexandria—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, has plans approved by War Dept., Washington, for bridge over Red River. 11-27-30

La., Lafayette—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, has plans approved by War Dept., Washington, for bridge over Vermilion River, 2 mi. south of here; movable span with horizontal clearance of 50 ft.

La., New Orleans—Following estimating on steel bridge over London Ave. canal at Mirabou St., bids due Office of City Pur. Agt., 24 City Hall Bldg., May 19: J. M. DeFrait, Inc., 612 State St.; Gervais F. Favrot, Balter Bldg.; Thos. H. Brockman, Canal Bank Bldg.; Lionel F. Favret, Louisiana Bldg.; B. N. Davis, 1006 Tchoupitoulas St.; O'Brien Construction Co., American Bank Bldg.; Dalgarn Construction Co., Louisiana Bldg.; H. N. Moody, 815 Perdido St.; J. Ed. Hemenway, 4130 Baudin St.; H. P. Farnsworth, Canal Bldg.; A. M. Fromherz, Queen & Crescent Bldg.; Merritt, Chapman & Williams Corp., Southern Bldg., and Lewis M. Buja, 1431 Leda St. 5-7

Mo., St. Louis—City, Bd. of Public Service, City Hall, receives bids in early summer for rein. conc. bridge, Riverview Dr. over Marine Creek, \$110,000; L. R. Bowen, City Engr.

OKLAHOMA—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, has preliminary plans for 3 bridges in following counties:

Major—7-span, 120-ft. rein. conc. bridge, Isabella, \$30,000;

Pontotoc—1-span, 140-ft. steel truss bridge on piers, Roff, \$30,000;

Ellis—7-span, 112-ft. rein. conc. bridge, Gage, \$25,000.

Oklahoma-Texas—Oklahoma Highway Commission, Sam R. Hawks, Chmn., Oklahoma City, and Texas Highway Comsn., G. G. Wickline, Bridge Engr., Austin, have apparent low bid from George W. Condon & Co., Dallas, at \$125,795, for bridge over Red River. 4-30

Okl., Pawhuska—Osage County Comms. have preliminary plans for \$27,000 8-span, 120-ft. rein. conc. bridge over Hominy River, Hominy; W. H. Clark, Engr.

Okl., Verdigris—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, has preliminary plans for \$140,000 bridge over Verdigris River; 2 span, 260 ft., steel truss on piers.

Tennessee—See Roads, Streets and Paving.

Texas—See Roads, Streets and Paving.

Texas—State Highway Comsn. has low bids for 7 bridges. See Roads, Streets and Paving.

Tex., Fort Worth—City Council ordered O. E. Carr, City Mgr., to obtain preliminary plans for underpass as route across railroad trackage to form entry for proposed inter-urban highway and airline boulevard to Dallas.

Tex., Houston—Harris County Comms. Court soon call bids for widening underpass under G. H. & H. R. R., La Porte road.

Tex., New Braunfels—City, Helmar Fischer, Mayor, opens bids June 1 for Comal River bridge; 3 span, rigid frame, rein. conc., approx. 165 ft. long, 20-ft. roadway, 2 sidewalks, 4 ft. clear, orna. railing; J. W. Berretta Engineers, Inc., Engr., 1203 Natl. Bank of Commerce Bldg., San Antonio; Jeremiah Schmidt, Consit. Archt. 3-26

Tex., San Benito—Rio Grande del Norte Investment Co. applied to U. S. Engr. Office, Galveston, for permit to build bridge over Rio Grande River at point immediately south of here.

Tex., Waco—McLennan County soon take bids for 507-lin. ft. steel, conc. overpass, 24-ft. roadway, 2000-ft. approaches, over Missouri-Kansas-Texas tracks, Highway 31, FAP 605-B, \$60,000; H. C. Porter, Res. Engr., 323 Provident Bldg.

West Virginia—See Roads, Streets and Paving.

Contracts Awarded

D. C., Washington—Concrete Steel Co., Pittsburgh, Pa., has contract for 211 tons rein. steel for tunnel under Arlington Memorial bridge; J. H. Coleman, Gen. Contr., Clarendon, Va. 4-16

Ky., Louisville—Louisville & Nashville R. Co., H. T. Shanks, Gen. Pur. Agt., ordered 540 tons struc. steel, bridge requirements, from Virginia Bridge & Iron Co., Roanoke, Va.

Maryland—State Roads Comsn. has low bids for 2 bridge projects. See Roads, Streets and Paving.

Oklahoma-Texas—Texas Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, tentatively let contract to W. L. Crawford, Dallas, at \$122,501, for bridge over Red River between Vernon, Tex., and Altus, Okla., Texas Highway 23; subject to approval of Oklahoma Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City.

Oklahoma—Atchison, Topeka & Santa Fe Ry. Co., G. W. Harris, Ch. Engr., Chicago, ordered by State Corporation Comsn., Oklahoma City, to join State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, in building crossing on proposed new route of U. S. 66, near Davenport, 30 ft. wide, \$32,000.

Texas—Almao Iron Works, San Antonio, has contract for 213 tons rein. steel for bridges, Brazos County; W. W. Vann & Co., Gen. Contr., Mercedes.

Va., Richmond—See Miscellaneous Construction.

Canning and Packing Plants

Tex., Nacogdoches—J. A. Killian, N. Church St., will probably let contract to Louis Rufe, Nacogdoches, for canning plant, season output 75 cars canned tomatoes; 40x100 ft., with added boiler room and unloading rack; metal roof; conc. floors; install equipment for complete plant. 5-7

Coal Mines and Coke Ovens

Mo., Huntsville—Grant Stauffer, Sinclair Coal Co., 1012 Baltimore Ave., Kansas City, advises regarding Sinclair Mining Co.'s development near Huntsville, that nothing will be done with this operation for several months at least; have purchased the land but do not know just when it will be put in operation. 1-29

Okla., Poteau — Daisy Diamond Mining Co., incorporated; H. E. Kendrick.

Cotton Compresses and Gins

Tex., Bryan—Bryan Compress and Warehouse Co., reported, acquired Farmers Warehouse Co.; will move compresses to new site.

Tex., Collinsville—F. G. Abbey, Inc., chartered; Franklin G. Abbey, Harry E. Spafford.

Tex., Kenedy—Kenedy Mill & Ginning Co., capital \$24,000, incorporated; A. H. Karbach, John W. Thames.

Tex., Lockhart—J. O. Lipscomb Estate will rebuild burned cotton gin.

Drainage, Dredging and Irrigation

Fla., Dunedin—City applied to U. S. Engr. Office, Tampa, for permission to establish anchorage basin and pier at city park; provide 10 boat slips.

Ga., Brunswick—U. S. Engr. Office, Savannah, returned bids to bidders unopened owing to error in specifications for dredging East River, Brunswick. 4-9

Maryland—U. S. Engr. Office, 300 Custom House, Baltimore, has low bid from Lukens Dredging & Contracting Co., Snow Bldg., Baltimore, at 19.6 cents per cu. yd., for dredging approx. 99,056 cu. yd., place measurement, Broad Creek River, Del.; 65,187 cu. yd., Corsica River, Md., and 16,663 cu. yd., Kent Island Narrows, Md. 4-9

Miss., Biloxi—U. S. Engr. Office, Mobile, Ala., plans starting dredging Biloxi Channel in July; plans to be submitted to Chief of Engineers, Washington, for approval.

Miss., Greenville—Bd. of Mississippi Levee Commrs., Ernest Kellner, Sec., opens bids May 20 for approx. 100,000 cu. yd., Black Bayou Drainage canal, 4 mi. north of here.

Miss., Vicksburg—U. S. Engr. Office has low bid from Nashville Bridge Co., Nashville, Tenn., at \$293,700, for dredge.

Mo., New Madrid—New Madrid County Drainage Dist. 23 opens bids about June 24 for reclaiming drainage ditches, 189,975 cu. yd., 4 conc. catch basins, drain pipe, new bridge, etc.; W. E. Davis, Dist. Engr., Point Pleasant.

Tex., Raymondville—Willacy County Water Control & Improvement Dist. No. 1, W. A. Harding, Pres., has plans approved by State Bd. of Water Commn., for \$7,500,000 irrigation system; includes storage reservoir; water will be pumped from Rio Grande at west line of Cameron County and will flow 27 mi. northward to large storage reservoir with a capacity of 75,000 acre ft.; from reservoir 14 main canals will lead out into all parts of district, serving lands through 560 mi. conc. lined canals and conc. pipe; construction under way on intake canal from Rio Grande to storage reservoir and first units of reservoir are completed; one unit filled with water; construction started about 2 years ago and about 2 more years will be required for completion; Morgan Engineering Co., Engrs., Harlingen.

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Arkansas—Regarding report that Arkansas-Missouri Co., Blytheville, Ark., and 72 W. Adams St., Chicago, Ill., would build 2 additional dams at cost of \$320,000 on Spring and Black Rivers, company advises that construction of these projects has been indefinitely postponed; no contracts let nor any material purchased.

D. C., Washington—Dwight P. Robinson, Pres. of United Engineers & Constructors, Inc., 112 N. Broad St., Philadelphia, Pa., announced execution of contract with U. S. Gov. Treasury Dept. for preparation of engineering plans for new Central Heating Plant and steam and electrical distribution

systems; cost \$5,749,000; supply heat to 26 government buildings; consume in year 1,500,000,000 lbs. steam; new heating plant will provide 75% of that capacity; be designed to permit future extensions; steam will be distributed to buildings through underground system pipe varying in diam. from 3-in. to 18-in., with aggregate length 5 miles; in connection with heating plant, an electrical substation will be built to distribute electric power, all of which is to be purchased from Potomac Edison Co. 4-30

Fla., Leesburg—Florida Power Co., St. Petersburg, reported, negotiating for power plant.

Fla., Ocala—City, J. R. Martin, Mayor, receives bids July 7 for furnishing and installing machinery in electric light plant. See Want Section—Bids Asked.

Ga., Albany—Georgia Power Co., Atlanta, reported, may build 44,000-volt transmission line from Albany connecting at Americus with the Macon and Columbus lines.

Maryland—Eastern Shore Public Service Co., A. W. Higgins, Pres., Salisbury, Md., offering \$1,250,000 first mortgage and first lien 25 yr. 5% gold bonds, Series B, through E. H. Rollins & Sons, Boston, Mass., and associates; company owns and operates electric public utility properties in Delaware and Maryland and Virginia; upon completion of this financing company will own preferred and common capital stock of Maryland Light and Power Co., Easton, Md.; its subsidiary, Eastern Shore Public Service Co. of Virginia, Salisbury, Md., will also acquire additional properties.

Md., Baltimore—Roland Electric Co., 418 E. Pratt St., reported, low bidder at \$14,647 for high tension electric sub station City Hospital, Eastern Ave.

Miss., Holly Springs—City plans purchasing 280 h.p. oil burning engine to supplement 2 engines of 185 h.p. each now in use.

Mo., Ellington—Van Buren Light, Power & Ice Co., reported, plans rebuilding burned power station. 3-26

Mo., St. Louis—City, C. Gonter, Engr., City Hall, reported, install 200 traffic signal lights, each to include 3 ton shaped base, metal pole; flashing signal lights and fixed white lights; cost \$65,000.

Tenn., Memphis—Tennessee Utilities Service Co., 81 Monroe St., incorporated; Charles M. Bryan, Chamber of Commerce Bldg.

Texas—Gulf States Utilities, Beaumont reported, applied for franchise to erect power lines on Bolivar Peninsula to serve High Island oil field; has contract with Yount-Lee Oil Co., San Jacinto Life Bldg., Beaumont, to supply electric power for operation of rigs.

Texas—See Ice and Cold Storage Plants.

Tex., Caldwell—City, reported, let contract to Fairbanks, Morse & Co., 1713 N. Market St., Dallas, for power plant; double unit with 2 oil burning engines and 2 generators.

Tex., Eagle Pass—Central Power and Light Co., San Antonio, advises company is purchasing water from irrigation district near Eagle Pass; hydraulic and electric equipment purchased; Harza Engineering Co., 20 N. Wacker Drive, Chicago, Ill., are doing the designing work; general contract for power house not let; J. T. Persons, Ch. Engr. 4-2

Tex., Eagle Pass—Central Power and Light Co., Alamo Natl. Bank Bldg., San Antonio, reported, let contract to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., for 3 large vertical water wheel generators for \$700,000 hydro electric plant on irrigation canal adjacent to Rio Grande River; generators of umbrella type and 4 kw. capacity; cost \$125,000; another major project of the company is high voltage line from Falfurrias to Edinburg connecting up territory from Alpine-Brownsville; capacity 66,000 volt. 1-29

W. Va., Charleston—Appalachian Electric Power Co., reported, let contract to L. H. Keeney, S. Ruffner St., for garage, repair shop and warehouse; Warn, Tucker, Dilling & Hutchinson, Archts., Masonic Bldg.

Flour, Feed and Meal Mills

Tex., Panhandle—Gwynn-Render Grain Co., capital \$40,000, incorporated; W. E. Gwynn, F. A. Render.

Tex., Wichita Falls—J. C. Hunt Grain Co., capital \$100,000, incorporated; James C. Hunt, 406 Sixth St.

Garages and Filling Stations

D. C., Washington—Following list of contractors and others have received plans and specifications for terrace, fountain and garage, enlargement of Capitol Grounds, bids opened May 28: Turner Construction Co., 3315 8 St. N. E., National Construction Co., Tower Bldg., The Geo. Hyman Constr. Co., 1010

Vermont Ave., Malatico Constr. Co., International Exchange Bank Bldg., L. C. Angstrom, 4348 Garfield St., N. W.; Loudoun-Rust Co., Dist. Natl. Bank Bldg.; George E. Wyne, 2539 Pennsylvania Ave., N. W.; M. Shapiro & Son, 804 Chandler Bldg., all of Washington; Catalano & Pecora Construction Co., El Dorado and Haddon Aves., Baltimore, Md.; The MacDonald Spencer Engr. Co., Inc., Graybar Bldg., New York; John McShain, 1610 North St., Philadelphia, Pa.; North-Eastern Construction Co., 6 W. Madison St., Baltimore, Md.; The John W. Cowper Co., State Planters Bank Bldg., Richmond, Va.; Newport Contracting & Engineering Co., Lee Hall, Va.; F. W. Mark Construction Co., Inc., 333-338 Commercial Trst Bldg., Philadelphia, Pa.; Stoflet & Tillotson, 605 Wesley Bldg., Philadelphia, Pa.; Lee Paschall, American Bldg., Richmond, Va.; J. Henry Miller, Inc., S. W. Cor. Eutaw and Franklin Sts., Baltimore, Md.; Ralph S. Herzog, 10 S. 18 St., Philadelphia, Pa.; Chas. Shurtump & Sons Co., 1200 Euclid St., Cleveland, O.; Wark Co., 1608 Walnut St., Philadelphia, Pa. 5-7

D. C., Washington—Chas. D. Holden, 2800 Alabama Ave., S. E., let contract to E. E. Ward & Son, 3363 11th St., N. W., for brick and conc. gas service station; 55x20 ft.; conc. floor, slag roof. See Want Section—Machinery and Supplies.

Fla., Jacksonville—Bills Auto Supply Corp., incorporated; A. Wolff, 1137 E. 11th St.

Ga., Atlanta—Specification Motoroil System, Inc., Sterick Bldg., Memphis, Tenn., reported, construct oil station, Spring and Fair Sts.

Ky., Frankfort—Kentucky State Highway Commn., Ben Johnson, construct garage; plans complete; date opening bids not set; 129x133 ft.; 2 stories, compo. roof; conc. foundation and floors; steel sash and trim; metal doors; install elevator; cost \$75,000.

Md., Baltimore—Florence Reeside, 4201 Massachusetts Ave., C. R. Miller, Agt., 222 S. Collington Ave., construct garage Ashburton St. nr. Baker; conc. block; 1 story; probably take bids in spring.

Md., Baltimore—National Expansion Corp., Charles Greenblatt, 214 St. Paul St., reported, soon take bids for filling station York Rd. and Codl Spring Lane, brick; 1 story.

Md., Baltimore—Charles H. Henkel, 2740 Edmondson Ave., taking sub bids for garage, including metal sash, skylights, roofing, plumbing, etc.

Md., Baltimore—Charles J. Meister, 2601 Pennsylvania Ave., construct 1 story, brick, garage; Wm. Ganter, Archt.

Md., Baltimore—Kirke Bros., 1810 Morton St., construct filling station, 1811 Maryland Ave.; 1 story, brick and stucco.

Md., Baltimore—Westport Motor Co., capital \$25,000, incorporated; Samuel T. Wright, 242 N. Hilton St.

Md., Baltimore—B. H. B. Ennis, 1933 E. 31 St., reported, has contract for service station 2600 Gwynns Falls Parkway for Sherwood Bros., Baltimore Trust Bldg.

Md., Baltimore—Parking Centre Service Station, received bids May 12 for service station and garage St. Paul Place and Centre St.; 2 stories; stucco and brick; 96x200 ft.; cost \$60,000; following contractors estimating: Price Construction Co., Maryland Trust Bldg.; Lacchi Construction Co., Munsey Bldg.; C. W. Schmidt, Hearst Tower Bldg.; B. F. Bennett Building Co., 123 S. Howard St., all Baltimore; James Baird Co., Inc., 1800 E St., N. W.; Geo. A. Fuller Co., Munsey Bldg., both Washington, D. C.

Md., Pikesville, Baltimore—Sherwood Bros., Baltimore Trust Bldg., Baltimore, received bids May 13 for filling station, 1 story, brick; following contractors estimating: Lacchi Construction Co., 522 Munsey Bldg.; Thos. F. Leonard, 315 Brehms Lane; H. J. Geyer, 11 Beachfield Ave.; E. Eyring & Son, 809 Conkling St.; D. M. Andrew Co., 26 and Sissons Sts.; H. E. Delcher, 2425 Oak St.; T. Kelly Construction Co., 3112 Grindon Ave.; T. F. Watts, 12 W. Madison St.; Milsky Bros., 2125 Orleans St.; Ralph Simmers, 4547 Harford Rd.; B. H. B. Ennis, 1933 E. 31st St.; Fred Keller & Son, 77 E. Echodale Ave., all Baltimore; L. E. Grove, Randallstown; R. H. Triplett, Harrisville.

Mo., Richland—Ozark Chevrolet Co., capital \$15,000, incorporated; J. A. Miller, W. C. Payne.

Mo., University City, St. Louis—Hafner Auto Repair Co., incorporated; Edw. P. Hafner, 8800 Olive St. Road.

N. C., Burlington—Fidelity Motor Lines, Inc., chartered; W. Erdman Love, H. L. Arnold.

N. C., Goldsboro—Matthews Motor Co., capital \$100,000, incorporated; T. H. Wright, 110 N. 15th St., Wilmington.

N. C., Hocky Mount—Chapman Tire Co., capital \$25,000, incorporated; R. C. Tyree, 815 S. Church St.

Tex., Borger—Main Chevrolet Co., capital \$15,000, incorporated; J. R. Cullum, F. C. Cullum.

Tenn., Memphis—Packard Memphis, Inc., capital \$75,000, incorporated; Wm. P. Metcalf, Exchange Bldg.

Tex., El Paso—J. R. Turner Co., Inc., capital \$15,000, chartered; J. R. Turner, 900 Cincinnati St.

Tex., Fort Worth—Hubb Digs Co., incorporated; Hubb Digs, 915 Commerce St.

Tex., Jasper—Markley Chevrolet Co., incorporated; George G. Markley, C. R. Markley.

Va., Roanoke—Motor Car Body and Reining Co., capital \$25,000, incorporated; Lucius C. Johnson, 12 Kirk Ave., W.

Gas and Oil Enterprises

Fla., Jacksonville—City, Ernest E. Anders, Commr. Public Utilities, let contract to Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., at \$22,470 for two 40,000 bbl. fuel oil storage tanks at Municipal Electric Plant, Talleyrand Ave.; new pipe line, cost \$10,000, will be built by city's forces. 5-7

Ky., Carrollton—Earnest Oil and Gas Co. incorporated; Thomas C. Childers, R. B. Hickey.

Ky., Owensboro—City, C. A. Rogers, Clk., plans voting in Nov. on \$250,000 natural gas distribution bonds.

Ky., Pikeville—Pike Gas Co., capital \$12,000, incorporated; W. M. Carter, C. D. Jacobs.

Miss., Hattiesburg—Public Service Corp. of Mississippi, Frank K. McGehee, 5214 Vanderbilt St., Dallas Tex., reported, granted permission to construct gas line for fuel, connecting with plant of Gulf States Creosoting Co., W. Pine St. 4-30

Mo., Palmyra—Central States Gas & Utilities Co., Kansas City, reported, plans \$50,000 natural gas distribution system in city and spur line from Mark.

N. C., Elkin—C. F. Lineberry Oil Co., capital \$50,000, incorporated; C. F. Lineberry, Elkin; W. A. Fender, North Wilkesboro.

Okla., El Reno—City Commrs. voted in favor of 7 yr. extension to gas franchise to Oklahoma Gas & Electric Co., subject to ratification by people.

Okla., Garber—W. G. Humphreys, 507 Security Bldg., Omaha, Neb., reported, has contract for natural gas distribution system; cost \$27,000. 2-26

Okla., Miami—City voted \$150,000 for construction or purchase of city plant; citizens authorized creation of public utility board to supervise construction, development, etc., of water works, electric light and power, sewage system and proposed gas utility; plans purchasing gas from Nowata county, 40 miles from Miami. 5-7

Okla., Okmulgee—McCulloch Oil Co., incorporated; J. W. McCulloch, McCulloch Office Bldg.

Texas—Shell Petroleum Co., Athletic Bldg., Dallas, reported, acquired plants in Texas Panhandle formerly operated by Seaboard Gasoline & Refining Co., Los Angeles, Calif.; will remodel; also acquired gasoline loading racks of Seaboard at Skellytown, Tex.

Texas—Sinclair Oil Co., 45 Nassau St., New York, reported, completed surveys for pipe line from East Texas oil fields to Mexia; booster stations, etc.; cost approximately \$1,000,000. 4-23

Texas—Mid-Kansas Oil & Gas Co., operated by Ohio Oil Co., Findlay, O., reported, construct 10-in. oil transmission pipe line from East Texas oil fields to central storage and distributing point, soon to be selected; booster stations, etc.; cost \$1,000,000.

Texas—Houston Oil Co., Petroleum Bldg., Houston, reported, expend \$1,000,000 for enlarging refinery at Viola.

Texas—Atlantic Refining Co., 260 S. Broad St., Philadelphia, Pa., reported, let contract soon for 200 mile of 6 and 8-in. pipe line. 2-12

Tex., Abilene—E. W. Moutray, construct refinery at Hawley near Abilene; capacity 1,000 bbls. crude oil daily; will manufacture gasoline and light oils; J. P. Bohannon, Mgr.

Tex., Dallas—Columbia Oil and Gas Co., capital \$200,000, incorporated; W. L. Todd, 3500 Cornell St.

Tex., Dalhart—Waggoner Refinery Co., Electra, reported, expend \$20,000 for wholesale plant and retail station.

Tex., Dallas—East Texas Petroleum Corp., incorporated; George Avon Jackson, 5832 Victor St.

Tex., Dallas—Crudeoil Co., Inc., chartered; T. C. Eades, Courthouse.

Tex., Fort Worth—Texworth Corp., capital \$20,000, incorporated; F. J. Holmes, F. J. Holmes Bldg.

Tex., Houston—Cherokee Oil and Gas Co., capital \$50,000, incorporated; J. A. Kerber, 1426 Castle Court.

Tex., Houston—Southern Interstate Co., incorporated; Joseph H. Barrow, 2224 Robinhood St.

Tex., Overton—Foster Petroleum Co., incorporated; W. S. Foster, A. C. Page.

Tex., Rio Grande City—F. A. Hornaday, Maverick Bldg., San Antonio, reported, organized Rio Grande Public Service Co.; closed contract with Los Olmos Oil & Gas Co., Harlingen, for output of leases 8 miles northeast of Rio Grande City; will pipe and distribute gas in city; later supply town of Mission.

Tex., Taylor—Citizens Oil Development Co., incorporated; John A. Thompson, Y. F. Hopkins.

Tex., Texas City—Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., reported, has contract for 305 tons, struc. shapes, for 80,000 bbl. tank for Republic Oil & Refining Co., Donna D. Hovey, V. P. Houston, in connection with cracking plant and tank farm now under construction. 4-2

Tex., Wellington—City postponed election on \$80,000 gas plant bonds until June 23.

Tex., Wichita Falls—Staley-Wynne Oil Corp., incorporated; J. I. Staley, Staley Bldg.

W. Va., Clarksburg—American Oil Co., American Bldg., Baltimore, Md., acquired holdings of Jarvis Oil Co. in Clarksburg, Fairmont and Weston; holdings include service station at Adamston underpass and station on West Pike in Point Comfort; plan improvements.

Ice and Cold-Storage Plants

Fla., Miami Beach—New Ice Corp. of America, incorporated; R. B. Ingman, 1462 S. W. 16th St.

Texas—Central Power and Light Co., Alamo Natl. Bank Bldg., San Antonio, acquired electric and ice properties in 5 communities in Gulf Coast district, including Aransas Pass, Rockport, Bayside, Ingleside and Fulton; plans transmission line from point on Taft-Woodboro transmission line 4 miles south of Woodboro to connect at Bayside with present transmission system; erect substation equipped with modern switching and safety devices.

Tex., Farmersville—City, reported, plans erection of ice plant.

Land Development

Fla., Auburndale—D. P. Nunn & Co., Inc., chartered; D. P. Nunn, R. E. Stivender.

Fla., Clearwater—Belleair Holding Corp., incorporated; O. F. Humphreys, E. W. Homer.

Fla., Green Cove Springs—George F. Davis, Inc., chartered; G. F. Davis, M. G. Davis.

Fla., Jacksonville—A-G-B Holding Co., incorporated; H. Clayton, 2925 Riverside Ave.

Fla., St. Petersburg—Bundoran Realty Co., Inc., chartered; F. Smith, 4018 Central Ave.

Fla., Miami Beach—The Lenox Co., 846 Lincoln Rd., reported, develop subdivision adjacent to Alton Rd.

Fla., Vero Beach—Thomas Woolings developing 20 acre tract; will drill well; motor driven electric plant installed.

Ky., Louisville—City Planning and Zoning Comsn., reported, adopted recommendations of Harland Bartholomew and Associates, 317 N. 11th St., St. Louis, Mo., for beautification and development of Ohio River frontage; propose to acquire all river frontage from Goose Creek to Big Four R. R. bridge and convert into series of parks with river driveway; building of plaza over railroad tracks at central river front from Third to Seventh St., creating 35 miles of parks and driveways in a belt around the city; park, reflecting basin and underground parking in front of Memorial Auditorium; access to the levee would be provided by ramps at Seventh and Third Sts.; construct additional levee at Third St.; water frontage between Big Four Bridge and 21 St., developed for industrial purpose, etc.; H. W. Alexander, Resident Engr., 2406 Woodbourne St., Louisville; estimated cost of acquiring land \$10,000,000.

Ky., Louisville—Roseland Holding Corp., capital \$50,000, incorporated; Amos Benjamin, 216 Shawnee Terrace.

La., New Orleans—Urban Realty Co., Inc., capital \$50,000, incorporated; Jos. W. Schwartz, 3310 Upperline St.

Mo., Springfield—Phil A. Bennett, 644 E. Lombard St., reported, develop 350 acres on shores of Lake of the Ozarks, for resort town, with clubhouse; install water and sewer system, etc.; J. David Hamel, Consult. Engr.

N. C., Asheville—J. Ross Eakin, Supt. Great Smoky Mountains National Park and Verne Rhodes, Executive Secy., North Carolina Park Comsn., reported, soon begin development of park; has acquired 127,000 acres.

N. C., Marion—A. M. Kistler, Morganton, reported, acquired Lake Tahoma, artificial lake covering 500 acres.

Okla., Pryor—City recently voted \$85,000 park bonds.

Tex., Austin—City expend \$42,000 for additional parks and playgrounds.

Tex., Carrizo Springs—Townsite Corp., chartered; T. N. Pienot, G. R. Taylor.

Tex., El Paso—Gilmore Oil Co., Ltd., chartered; James E. Rogers, Caples Bldg.

Tex., El Paso—City plans development Grandview Park.

Tex., Houston—Paradise Cemetery, Inc., capital \$15,000, incorporated; L. F. Boring, 4516 Kyle St.

Tex., Longview—Trentham Co., develop 40 acre subdivision S. Highland Addition on S. Green St.

Tex., San Antonio—G. & C. Hagelstein, 310 N. St. Marys St., developers of Woodlawn Hills, reported, plan development in northwestern section for community center.

Va., Alexandria—Pohick-Indian Springs Farm, Inc., capital \$150,000, incorporated; Richardson A. Baker, Lorton.

Va., Clarksville—William D. Maxey Construction Co., Inc., incorporated; Billie B. Maxey.

Va., Williamsburg—Williamsburg Colony, Inc., capital \$15,000, incorporated; R. P. Wallace.

Lumber Enterprises

Md., Baltimore—Service Lumber Co., Inc., capital \$100,000, incorporated; James L. Rettberg, 721 Springfield Ave.

N. C., Monroe—Monroe Mfg. & Lumber Co., incorporated; J. E. Triplett, R. P. Lemmond.

Va., Bassett—Valley Veneer Co., Inc., J. D. Bassett, Pres., has plant with daily output 120,000 ft. single ply popular, oak etc.; let contract to Coe Mfg. Co., Painesville, O., and Kester Machinery Co., 430 N. Main St., Winston-Salem, N. C., for lathe, dryer, clipper and boiler; Richardson Electric Co., Martinsville, for light and power. 5-7

Metal-Working Plants

Mo., Kansas City—J. G. Jakobe & Sons, Inc., 818 E. 15th St., advises purchased site but does not intend to build for some time plant for fabrication sheet metal products. 5-7

Miscellaneous Construction

Ala., Mobile—Turner Terminal Co., Horace Turner, Pres., advises now erecting new steel warehouse and assembling materials to rebuild warehouse recently burned; other warehouses to be erected but no details available now; purchased steel building from Virginia Bridge & Iron Co., Roanoke, Va.; shortly place contract for another steel building; steel sheet piling purchased from Jones & Laughlin Steel Corp., Pittsburgh, Pa.; creosoted wharf materials from Republic Creosoting Co., S. end of Water St. Mobile; owner will direct construction, letting only sub-contracts.

Arkansas—U. S. Engr. Office, P. O. Box 667, Vicksburg, Miss., has low bid from F. D. Harvey & Co., Jonesboro, La., for 65,000 cu. yd. earthwork, north bank Arkansas River, Farley Lake Levee Dist., Item 1, 20,000 cu. yd., at 17.50 cents; Item 3, 45,000 cu. yd., 24 cents. 4-30

Fla., Okeechobee—U. S. Engr. Office, Jacksonville, opens bids May 25 for core drilling in Lake Okeechobee.

La., Lake Charles—Bd. of Commrs., Lake Charles Harbor and Terminal Dist., Elmer E. Shotts, Eng., P. O. Box 665, advises new dock program, will consist of new wharf unit, costing \$600,000; unit 1600x201 ft., on which will be carried 2 steel wharf sheds, 600x160 ft. each, and front portion of wharf structure will be carried on creosoted timber piling; back or shore half will be conc. floor extension on sand fill; 2 apron tracks will be carried along front of wharf on 31-ft. open apron; 2 depressed tracks will be on rear or shore side of structure; plan letting contract between June 15 and 30. 4-23

La., Natchitoches—Dept. of Commerce, Bureau of Fisheries, Commr. of Fisheries, Washington, reported, start work at once constructing fish hatchery. 11-27-30

La., New Orleans—Bd. of Commrs. of Port of New Orleans, New Orleans Court Bldg., has low bid from Kinnear Mfg. Co., Hibernia

Bldg., at \$33,886, for furnishing and erecting 138 steel rolling doors at Bienville St. wharf. 1-30

La., Shreveport—Capt. Geo. E. Lamb, Constructing Quartermaster, Barksdale Field, opens bids June 9 for 5-ton natural draft incinerator.

Md., Baltimore—Following have sub-contracts in connection with \$100,000 mausoleum, 6130 O'Donnell St., for Jacob Epstein, Baltimore Trust Bldg.: Cut stone, Rullman & Wilson, Lafayette Ave. and Dickenson St.; conc. work, John J. Earley, 2131 G St. N. W., Washington, D. C.; John E. Marshall & Sons Co., Gen. Contr., 117 South St.; Benjamin Frank, Archt., 517 N. Charles St. 4-2

Md., Easton—Kastenhuber & Anderson, Engrs., 204 Stewart Bldg., open bids May 23 for approx. 700 lin. ft. conc. sea wall, ranging from 3 ft. to 6 ft. high, at Halcyon, property of P. A. Rose, Talbot County.

Mo., Kansas City—Wabash Ry. Co., W. R. Bennett, Ch. Engr. M. of W. St. Louis, advises regarding \$300,000 addition to grain elevator, North Kansas City, bins are to be of rein. conc. and will have capacity of 1,000,000 bu., making total capacity over 4,000,000 bu. for elevator, all completely equipped with Zeleny system, dust collecting system, etc.; plans by railroad; Burrell Engineering & Construction Co., Gen. Contr., Daily News Plaza, Chicago, Ill. 4-30

Mo., Kansas City—Following have sub-contracts for grain elevator of Chicago, Rock Island & Pacific Ry. Co., W. H. Petersen, Ch. Engr., Chicago, Ill.: Pile driving, E. A. Whitney & Son, 610 City Bank Bldg.; piling, Manassa Timber Co.; ready mixed concrete, Ready Mixed Concrete Co., 25th and Summit Sts., all Kansas City, Mo.; machinery, J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kansas; rein. steel, Sheffield Steel Corp., Kansas City, Mo.; motors and control equipment, General Electric Co., Schenectady, N. Y.; excavation complete; piles 50% driven and will start concreting in few days; James Stewart Corp., Gen. Contr., 343 S. Dearborn St., Chicago, Ill. 5-7

N. C., Kitty Hawk—Constructing Quartermaster, Munitions Bldg., Washington, start work at once constructing Wright memorial, Kill Devil Hill; Wills & Mafera Corp., Gen. Contr., 303 W. 42nd St., New York. 3-19

Okla., Shawnee—Shawnee Milling Co., J. Loyd Ford, Pres., let contract to Jones-Hettelsater Construction Co., 600 Mutual Bldg., Kansas City, Mo., for 300,000-bu. rein. conc. addition to grain elevator.

Okla., Texahoma—Riffe Bros. Co. let contract to Chalmers & Borton, 720 Pioneer Tr. Bldg., Kansas City, Mo., at \$25,000, for 250,000-bu. grain elevator.

Tex., Houston—City, J. Russell Wait, Port Director, calling for bids for 125-ft. rein. conc. extension to City Dock No. 10 and conc. shed to cover same, total est. \$175,000.

Tex., Port Arthur—U. S. Engr. Office, Galveston, opens bids June 8 for constructing roof, revetment and pile clusters along Sabine-Neches Canal and in slip at U.S. Engr. Sub-office, Port Arthur.

Tex., Texas City—U. S. Engr. Office, Galveston, has low bid from W. E. Callahan Construction Co., 708 Kirby Bldg., Dallas, at \$468,820, for rubble mound dike on existing Texas City dike. 4-16

Virginia—Fill—See Roads, Streets and Paving.

Va., Richmond—City, R. Keith Compton, Dir. of Public Works, has low bid from A. H. Calligan & Co., Builders Exch., for addition to city wharf, at \$76,745, for conc. structure with conc. piles, and at \$55,117, for creosote timber piling; has low bid from Allen J. Saville, Inc., Electric Bldg., at \$6000 for conc. bridge over Gillies Creek, Fulton St.

Va., Richmond—War Memorial Comsn., Bolling H. Handy, Chmn., start work before June 1 on \$325,000 carillon tower, Byrd Park; Doyle & Russell, Gen. Contr., Central Natl. Bank Bldg.; Carneal, Johnston & Wright, Archt., Electric Bldg. 1-1

W. Va., Charles Town—Bureau of Fisheries, Washington, D. C., reported, started construction fish hatchery. (See Washington, D. C., 7-11-30.)

W. Va., Moundsville—State Bd. of Control, Herman G. Johnson, Sec., construct \$100,000 wall at penitentiary with prison labor; P. J. Goodwin, Engr., and A. Soupert, Bldg. Inspector for board.

Miscellaneous Enterprises

Ala., Birmingham—Southern Construction Co., 516 S. 11th St., reported, has contract for bottling plant for Dr. Pepper, Inc.; 2 stories and basement; 130x60 ft.; rein. conc.; brick and tile walls; composition roof; D. O. Whildin, Archt., 517 N. 21st St. 3-5

Ala., Geneva—Riverside Underwear Corp., 480 Broadway, New York, reported, leased plant of Geneva Underwear Co.

D. C., Washington—Charles H. Tompkins Co., 1608 K St., N. W., will erect building 301 N St., N. E., for National Capitol Press, 1210 D St., N. W.; 3 story; brick and conc.; 150x1500 ft.; cost \$17,000. 2-19

Fla., Clearwater—Roebbing & Thompson Construction Co., Inc., chartered; D. Roebbing, R. M. Thompson.

Fla., Jacksonville—Moore's Pure Food Co., chartered; L. C. Moore, 140 W. Ninth St.

Fla., Miami—Florida Air Drying System, Inc., capital \$50,000, incorporated; E. J. C. Perkins, 1134 N. W. Fifth St.; manufacture air drying machines.

Fla., Miami—Pickett Engraving Co., Inc., chartered; A. C. Dressler, Security Bldg.

Fla., St. Cloud—Orange Publishing Co., capital \$100,000, incorporated; Alfred H. Heim, St. Cloud and Danbury, Conn.; acquired and will operate properties and publications of old St. Cloud Tribune Co.

Fla., Tampa—Ricketts & Haworth, Eva and Raymond Sts., Tampa, reported, have contract for \$40,000 brick addition to Ybor City factory of E. Regensburg & Sons, cigar manufacturers; 60x95 ft., 3 stories, with finished basement across east end of present building, Michigan Ave. and 16th St.; interior standard factory type construction with steel beams and columns; basement will include cold storage department; Couch & Parslow, Archts.

Ga., Atlanta—Cluett Peabody & Co., Inc., Troy, N. C., reported, acquired plant at 182 Murphy Ave., S. W., and tract of land for probable expansion. 4-16

Georgia—Stockholders of Foremost Dairy Products Co., Inc., 136 Riverside Ave., Jacksonville, Fla., reported, ratified purchase of stock in creameries in Southeastern states by John Sancken, George A. Sancken and H. R. Breamer of Augusta; deal includes plants in Savannah, Macon, Hawkinsville and Atlanta, Ga.; Spartanburg and Columbia, S. C., and Charlotte, N. C. 4-23

Ga., Atlanta—National Biscuit Co., Robt. R. Galloway, Mgr., 449 W. 14 St., New York, advises that project of building a National Biscuit Co. plant at Atlanta, has been abandoned. 4-16

La., Colfax—Tee Juana Co., Inc., Paul Sippil, Pres., 428 Forest St., Shreveport, reported, completed arrangements for construction of building 66x130 ft., framework and sheet iron, for manufacture asphalt products including road building material. 5-7

La., Morgan City—Southern Foods, Inc., capital \$30,000, incorporated; Alfred Mead.

La., Morgan City—Dracket Fisheries, Inc., M. D. Shannon, Pres., establish crab packing plant in Monarch Packing Co.'s building N. Front St.

La., Morgan City—May Trailers Inc., 416 N. Market St., Shreveport, reported, erect plant Railroad Ave. on site donated by Assn. of Commerce. 4-9

Md., Baltimore—Voneiff-Drayer Co. (Candy), 1604 Harford Ave., reported, let contract to J. Raymond Gerwig, 219 St. Paul St., for erection of warehouse; brick; 1 story; 79x95 ft.

Md., Baltimore—Polaris Lines, Cottman Co., Agt., Keyser Bldg., Baltimore, operate shipping line Baltimore to St. John, N. B.

Md., Baltimore—Kapsi-Kon Yeast Corp., 508 St. Paul St., incorporated; Alexander Hamill, 3111 Guilford Ave.; market medicinal yeast product.

Md., Baltimore—Hopkins Chemical & Mfg. Co., capital \$100,000, incorporated; Lewis W. Lake, Calvert Bldg.

Md., Lonaconing—Braziell & Anderson, Archts., 309 Fourth Ave., Pittsburgh, Pa., advise that construction of bakery at Midland for Ort Bros. has been indefinitely postponed. 5-4

Miss., Aberdeen—A. Brannin & Son, reported, has contract for improvements to laundry building.

Miss., Jackson—Dixie Glass Bottle Mfg. Co., has plans by Toledo Engineering Co., Toledo, O., for 50x265 ft. plant for manufacture glass containers. 4-30

Mo., Kansas City—Whittier Heals-Var Co., incorporated; H. J. Whittier, 329 Waterfront Road; manufacture medicines.

Mo., Kansas City—Walker Engineering Corp., capital \$100,000, incorporated; Val B. Mintun, Telephone Bldg.

Mo., Kansas City—Gordon Brothers Mfg. Co., 22 St. and Grand Ave., plans enlargement of garment manufacturing plant; acquired machinery of Denver Made Garment Co. will install at new location 2601 Grand Ave.

Mo., Kirkwood, Br. St. Louis—T. H. Culler, Ch. Engr., Jefferson City, receives bids May 21 for constructing division office building and garage building.

Mo., St. Louis—National Dress Co., incorporated; I. D. Goldberg, 764 Leland St.

Mo., St. Louis—Valorbilt Clothing Co., incorporated; Nathan Cohen, 1463a Goodfellow St.

N. C., Asheville—John M. Geary Construction Co., Arcade Bldg., reported, has contract for additions and improvements to local unit of Southern Dairies, Inc., main office 60 M St., N. W., Washington, D. C.; building will be 2 and 3 stories on Patten and Clingman Aves.; brick, conc. and steel with plate glass fronts; interior floors of red tile; walls of white tile; addition will double capacity of plant; install modern dairying machinery; cost \$100,000. 4-23

N. C., Charlotte—Clark Publishing Co., incorporated; David Clark, 18 W. Fourth St.

N. C., Charlotte—Simplex Machine Co., P. O. Box 181, Ellis W. Henderson, Pres., manufacture pattern control for Dobby looms, designed to handle pattern without use of box machine chains, pattern chains or multipliers, developed recently by J. L. Reynolds and J. M. McKelvey, Charlotte; machine will be manufactured for any size Dobby and will be marketed under name Simplex Pattern Control, by Simplex Machine Co.; will be manufactured under contract with Barkley Machine Works, N. Marietta St., Gastonia; no building or additional machinery anticipated for the present. See Want Section—Machinery and Supplies. 5-7

N. C., Durham—H. M. Durham Printing Co., 112 W. Washington St., capital \$40,000, incorporated; H. M. Durham, C. A. Rose.

N. C., Winston-Salem—Thirst-Ade Corp., capital \$50,000, incorporated; C. A. Dull, 107 Vintage Ave.; manufacture soft drink syrups.

Okla., Stillwater—Mid-West Tool Co., capital \$25,000, incorporated; G. W. Hannum, 420 N. W. 11th St.

S. C., Greenville—Major R. F. Watson, 113 James St., soon let contract for building for Battery and Electric Co., cor. Buncombe and Academy Sts.

Tenn., Athens—Nehi Bottling Co., capital \$15,000, incorporated; C. E. and Charles T. King.

Tenn., Clarksville—Dixie Mills, J. H. Winters, Pres., construct 20,000 bu. capacity sweet potato warehouse on E. Franklin St.; 36x60 ft.; 2 stories; interior walls of metal over wood; interior walls of insulated board; install furnace and fan system.

Tenn., Memphis—Nu-Way Ice Cream Machine Co., 264 S. Main St., incorporated; E. J. Hoskins, D. T. Wilkins.

Tenn., Nashville—Jarman Shoe Co., Gallatin Ave., reported, let contract at once for addition, adjacent to present plant; 1 story, brick; increase output to 9000 pr. shoes daily; \$60,000.

Tex., Austin—Austin Action Advertising Co., capital \$25,000, incorporated; David Doole, Jr., 400 E. 41st St.

Tex., Amarillo—Regarding report Harvey S. Firestone, Pres., Firestone Tire & Rubber Co., Firestone Park, Akron, O., was considering erection of tire plant in Southwest, E. A. Hoener, Ch. Engr., advises, do not have any program in mind towards further expansion of manufacturing facilities at this time.

Tex., Beaumont—Southern Iron and Metal Co., capital \$50,000, incorporated; A. Bleden, 1735 Broadway.

Tex., Dallas—Hargreaves Printing Co., capital \$15,000, incorporated; Sam Hargreaves, 612 N. Zangs St.

Tex., El Paso—Elephant Butte Dairy League, E. B. Link, 1813 N. Piedras St., Gen. Mgr., improving building formerly occupied by Link & Co. for distributing plant; machinery will be installed for dairy department, fruit and vegetable department.

Tex., Longview—Lacy Petroleum Co., Inc., capital \$12,000, incorporated; W. F. Lacy, J. F. Stuckey.

Tex., Fort Worth—Southwestern Tool Co., incorporated; Emil Dufek, 4054 Clark St.

Tex., Kilgore—Kilgore Daily News, H. G. Anthony, Editor, plans \$25,000 expansion program, erect brick building, install press and other equipment.

Va., Clarendon—Wm. B. Catchings & Co., Inc., chartered; Wm. B. Catchings, Raleigh, N. C.; contracting.

Va., Clarksburg—William D. Maxey Construction Co., Inc., chartered; B. B. Maxey.

Va., Newport News—Tidewater Engineering Co., Inc., chartered; Russell O. Sutton.

W. Va., Cameron—Colonial Glass Specialty Co., capital \$100,000, incorporated; Harold Platt, Akron, O.; A. J. Rowing, Cameron; acquired and will operate plant of Eureka Tumbler Co.

W. Va., Clarksburg—Flat Glass Specialty Co., capital \$300,000, incorporated; Lynn S. Hornor, Homer Bldg.; company organized to acquire and operate plant of American Sheet Glass Co., in Northview; plans call for extension plant facilities.

W. Va., Charleston—Pittsburgh Bridge & Iron Works, Fulton Bldg., Pittsburgh, Pa., reported, has contract for 350 tons fab. struc. steel for building for Electro-Metallurgical Co., 30 E. 42 St., New York.

W. Va., Parkersburg—City, L. G. Merrill, City Engr., will probably let contract to The Gamewell Co., Newton Upper Falls, Mass., for installation of fire alarm system and police control boxes.

Motor Bus Lines and Terminals

D. C., Washington—Coastal Transit Co., Wm. H. Vanderbilt, Pres., 230 Park Ave., New York, reported, announced consolidation of 12 major bus transportation organizations serving Central Atlantic, and New England States and having connections with other companies covering remainder of country; new company, Short Line System, will operate 400 busses over total of 5856 miles; plans of new organization include transcontinental service from Portland, Me., to Norfolk, Va.; system includes Great Eastern Stages, Inc., Waldorf Astoria, New York, and Chester Valley Bus Lines, Inc., 23 N. Liberty St., Baltimore, Md., both extending to Washington.

Tex., Refugio—Heard & Heard, Inc., incorporated; Thomas J. Heard, J. C. Heard.

Railways

Md., Curtis Bay, Baltimore—Chesapeake & Potomac R. R. Co., subsidiary of Washington, Baltimore & Annapolis Electric R. R. Co., W. T. Connolly, V. Pres. and Gen. Mgr., Baltimore, has application approved by City, Bd. of Estimates, for permission to construct and operate in city limits double track freight line to link Fairfield-Curtis Bay-Brooklyn district with established electric line at Shipley, Anne Arundel County, under condition that company build viaduct to carry tracks over Pennington Ave. and an underpass for Curtis Ave. tracks, widen underpass at B. & O. tracks, eliminate all grade crossings within city limits, and complete line within 5 years.

Mo., St. Louis—Missouri Pacific R. R. Co., W. A. Hopkins, Gen. Pur. Agt., ordered 15,000 tons of rails, order divided equally among Colorado Fuel & Iron Co., Denver, Colo.; Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.; Illinois Steel Co. and Inland Steel Co., both Chicago, Ill.

Va., Norfolk—Seaboard Airline Ry. Co., W. M. Portlock, Pur. Agt., ordered 1000 tons R. E. rail from Bethlehem Steel Co., Bethlehem, Pa.

Railway Shops and Terminals

Ky., Russell—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, Va., advises contractors will resume work on west-bound classification yard, authorized in 1930; Haley, Chisholm & Morris, Gen. Contrs., Charlottesville.

Okla., Boise City—Atchison, Topeka & Santa Fe Ry., G. W. Harris, Ch. Engr., Chicago, Ill., let contract to Roberts & Schaefer Co., 400 N. Michigan Ave., Chicago, for 200-ton capacity rein. conc. automatic electric locomotive coaling plant, gravity sand plant with steam drying facilities, and electric cinder handling plant.

Roads, Streets and Paving

In connection with **LAND DEVELOPMENT** large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Ala., Mobile—Mobile County Comsn. plans roads, including McGowin road.

Arkansas—State Highway Comsn., Dwight H. Blackwood, Chmn., has plans complete, soon let contract for reconstructing Highway 65 between Conway and Palarm; tentative plans call for building overpass at Palarm crossing over Missouri Pacific tracks, and widening and resurfacing present highway between Conway and Palarm.

Ark., Little Rock—Pulaski County, Glenn L. Douglass, County Engr., plans expending \$45,000 building Belt Line road (farm-to-market) between Sweet Home and Arch St.

FLORIDA—State Road Dept., Robert W. Bentley, Chmn., Tallahassee, opens bids May 19 for 5 roads in following counties:

Hillsborough—0.92 mi. plain cement conc., Road 17, Plant City, Proj. 710-D; 2.67 mi. plain cement conc. between Plant City and Polk County line, Road 17, FAP 80;

Alachua—3.30 mi. grading, draining, alternate bids on bitum. conc., Macasphalt and Kentucky rock asphalt, and surface treatment on portion of project, between Gainesville and Paradise, Road 14, FAP 81;

Sarasota—9.20 mi. lime rock base surface treated, Venice to Myakka River, Road 5, FAP 83.

Fla., Jacksonville—Duval County Comms., L. G. Hitchcock, Clk., opens bids May 20 for approx. 17,384 sq. yd. mixed-in-place sand asphalt pavement and approx. 200 cu. yd. excavation, First St. (Jacksonville Beach) and Palm Valley Blvd.

Ga., Augusta—State Highway Bd., J. W. Barnett, Chmn., Atlanta, soon call for bids for approaches to San Bar Ferry bridge and Fifth St. bridge.

La., Alexandria—City Council has low bid from Gulf Coast Paving Co., on gravel base at \$1 per sq. yd., for paving Hill St., Lee St. to City Park Blvd.

La., Crowley—City Council opens bids May 19 for paving drains, curbs and gutters, S. Parkerson Ave.

La., Bastrop—Morehouse Parish Police Jury opens bids June 2 for graveling Proj. 5, Road and Bridge Dist. No. 4, 4 mi., Proj. 100, Road Dist. No. 1, 1 mi., and for constructing road bed including surfacing and gravel for Proj. 200, Road Dist. No. 1, 3½ mi., and Wardville Lane, 1 mi.; J. Lester White, Parish Engr.

MARYLAND—State Road Comsn., L. H. Steuart, Sec., Baltimore, has low bids for 5 roads and 2 bridge projects in following counties:

Dorchester—3.05 mi. conc. shoulders, Mt. Holly to Cambridge, D-81-11, Old Line Construction Co., Chestertown, \$14,350;

Harford—4.03 mi. conc., Madonna-Hess road, 117-42, Harry T. Campbell Sons Co., Towson, \$77,850;

Howard—1.09 mi. macad., West Friendship-Ivory road, Ho-46-54, Thomas, Bennett & Hunter, Westminster, \$37,141;

Prince George's—extensions to 2 bridges on road, Bladensburg to D. C. line, P-172-311, Consolidated Engineering Co., 20 E. Franklin St., Baltimore, \$29,294; extension to 2 bridges on road, Hyattsville to Bladensburg, P-173-311, Fredericksburg Bridge Co., Fredericksburg, Va., \$24,557; conc. surface, conc. curb and conc. shoulders, Road Island, P-174-311, Jos. P. Lavezza, \$4717;

Washington—1.96 mi. conc., Cavetown toward Boonsboro, 92-64, John S. Tetter, Taneytown, \$37,229.

MARYLAND—State Roads Comsn., L. H. Steuart, Sec., Baltimore, opens bids May 19 for 4 roads:

Baltimore County—4.5 mi. sheet asphalt, Arlington Ave., Grindon Ave. to Harford road, BC-103-72;

Charles County—1.87 mi. gravel, Hughesville Burnt Store road, Ch-105-84;

Harford—1.76 mi. macad., Shook's Corner to Thomas Run, H-121-42;

Prince George's County—2.16 mi. conc. resurfacing and channel excavation of Anacostia River, Baltimore-Washington Blvd., Hyattsville to District line, P-146-311.

Md., Baltimore—Headquarters Third Corps Area, Office of Quartermaster, 311 St. Paul Pl., opens bids May 19 for resurfacing road, etc., Ft. McHenry, Md.

Md., Baltimore—City, Nathan L. Smith, Highways Engr., has low bid from Aiello Construction Co., 3700 Gough St., at \$13,091, for 6900 sq. yd. cement conc. paving, Contr. 596.

Miss., St. Louis—City Comms. open bids June 1 for surfacing certain streets with asphaltic and bitum. material.

Miss., Hattiesburg—State Teachers College, C. W. Woods, Business Mgr., opens bids May 28 for 775 sq. yd. conc. pavement with integral curb, 18,900 sq. ft. conc. walk, 5 ft. wide, drain pipe, manhole, excavation, etc.

MISSOURI—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, has low bids for 39 roads in following counties:

Andrew—1.615 mi. 20-ft. conc., 43AP-1, E. C. Johnson Construction Co., Carrollton, \$39,194;

Atchison—4.066 mi. graded earth, SC-1, A. W. Mosley, 5005 Troostwood Road, Kansas City, \$14,000;

Cass—3.385, 3.295 mi. chat, SA-3, SA-4, O. O. Fuller, Nevada, \$8297, \$8171;

Clark—1.621, 4.788, 4.868 mi. gravel, 81-2A, 81-3A, P. P. Hinote, Oakville, Ia., \$3888, \$5111, \$3627;

Cole—3.619, 3.403, 3.401 mi. graded earth, 1B, 1F, 1G, Martin Wunderlich, St. Paul, Minn., \$41,843, \$27,080, \$29,866;

Daviess—0.877, 3.975, 4.029 mi. 10-ft. conc., 6-14A, 69-29A, 69-30A, C. H. Atkinson Paving Co., Watertown, S. Dak., \$5262, \$23,168, \$2,835;

DeKalb—4.244 mi. 10-ft. conc., 69-31A, C. H. Atkinson Paving Co., \$24,870;

Dent—1.796, 3.157, 1.895 mi. gravel, 32-8, 32-9, 32-10, H. H. Ruddell, 759 Stanford St., Springfield, \$13,434, \$32,149, \$17,102;

Holt—3.288 mi. 10-ft. and 20-ft. conc., 341F, E. C. Johnson Construction Co., \$38,475;

Johnson—2.633, 3.295 mi. chat, SC-1, SC-2, C. L. Johnson, Warrensburg, \$9326, \$10,797;

Jefferson—3.498, 4.810, 1.495 mi. 20-ft. conc., 259E, 159F, 259I, Chas. N. Lund, St. Louis, \$93,207, \$93,306, \$30,278;

Madison—0.732 mi. 20-ft. conc., 67-1, Service Construction Co., Poplar Bluff, \$39,469;

Lafayette—3.770, 0.491 mi. 20-ft. conc., 332A, 24-13, E. D. Tyner Construction Co., 14th and Elmwood Sts., Kansas City, \$65,222, \$14,589; 2.585, 2.727 mi. chat, SK-1, SK-2, C. L. Johnson, Warrensburg, \$3062, \$3838;

Mercer—1.568, 4.207, 2.706, 3.218 mi. crushed stone, 339A, 339B, 339C, 339D, Alternates A, Pittsburgh-Des Moines Steel Co., Des Moines, Ia., \$84,146, \$37,733, \$15,922, \$49,023; Alt. B, Pioneer Construction Co., 270 Glover Bldg., Kansas City, on 339A; Mike Haase, 2823 Sacramento St., St. Joseph, on remainder, \$39,307, \$16,930, \$50,653;

Mississippi—2.936, 2.541 mi. gravel, SC-1, SC-2, Don Fike, Competition, \$6331, \$5435;

Polk—3.915, 3.712 mi. gravel, 64-56, 64-57, M. E. Gillioz, Monett, \$31,756, \$40,731;

Perry—0.833 mi. gravel, SA-2, Kiefner & Gelle, Perryville, \$16,455;

Stoddard—4.007 mi. gravel, 51-32A, Don Fike, \$4647;

Wayne—2.500 mi. graded earth, SA-2, Dent Tanner, Charleston, Mo., \$16,936.

Mo., St. Louis—City, Bd. of Public Service, opens bids June 9 for paving: Gravois Ave., Geyer Ave. to 18th St., \$67,800; Arsenal to Cherokee St., \$155,440; Grand Blvd. to Cherokee St., \$53,458; for paving west side of widened 12th Blvd., Hickory St. to Geyer Ave., \$42,500; 20-ft. conc. slab, Morgan Ford road, Kingshighway southwest to city limits, \$40,600; similar slab, Chippewa St., Tamm Ave. to Sulphur Ave., \$10,650, and paving Lansdowne Ave., McCausland Ave. to city limits, connecting with Ozark Trail, \$10,950.

Okla., Oklahoma City—City has low bid from Earl W. Baker Co. at \$53,838, for paving all districts in Denniston Park Addition.

Tennessee—State Dept. of Highways and Public Works, T. E. McEwen, Engr., Nashville, opens bids May 22 for 8.9 mi. grading, draining, Highway 29, between Dayton and FAP 231-F, including bridge over 20-ft. span, Proj. 231-G, Rhea County, \$75,000.

Tenn., Chattanooga—Office of Constructing Quartermaster, Fort Oglethorpe, 1225 James Bldg., Chattanooga, opens bids June 3 for road in National Cemetery.

Tenn., Memphis—City, Will Fowler, City Engr., probably open bids May 19 for widening and paving Monroe Ave., \$215,000.

TEXAS—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, plans 10 roads in following counties:

Anderson—7.0 mi. rein. conc. pavement, Highway 34, Elkhart to Houston County line, FAP 403-D, Unit 2;

Cherokee—10.321 mi. triple bitum. surface treatment, 20 ft. wide, Highway 37, Jacksonville to 2 mi. south of Smith County line;

Hardeman—13.217 mi. rein. conc. pavement or surfacing with double bituminous surface treatment on 8-in. compacted crusher run broken stone base course, Highway 51, Quanah south to Pease River, SAP 843-A, Unit 2;

Kerr—13.313 mi. grading, draining, Highway 27, Kendall County line to 5 mi. east of Kerrville, FAP 405 Rev., Sec. B, Unit 1, \$120,000;

Potter—11.498 mi. grading, draining, Highway 5 and 115, Canadian River bridge to Moore County line, FAP 585-B, SAP 968-D, Unit 1, \$78,000.

Eastland—13.8 mi. double bitum. surface treatment, Highway 23, Cisco to Callahan County line, \$26,000;

Callahan—steel and conc. underpass under Missouri-Kansas-Texas tracks, Highway 23, \$16,000;

Hall—surfacing 5.3 mi. Highway 18, Estel line to Hulver with special asphalt seal coat treatment, \$6,225.

Callahan—3.2 mi. double bitum. surfacing, Highway 23, Eastland County line to Shackelford County line, \$6,000;

Hardin—12.6 mi. shell surfacing 2 in. additional thickness, Highway 8, 4 mi. north of Jefferson County line to Silsbee, \$23,500;

Stephens—16.6 mi. caliche base with double bitum. surfacing, Highway 67, 2 mi. north of south city limits of Breckenridge to Eastland County line, \$77,000.

Texas—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, plans 9 roads and bridge. Making general survey of condition of highways in East Texas oil field; soon open negotiations looking to construction of free bridge over Rio Grande River between McAllen and Reynosa, Mex.; plans ordered prepared and bids taken on 5.5 mi. Highway 106, Tyler County, Woodville-Chester Road Dist. line to Woodville and for 10 mi. of Highway, Highway 40, Hardin County line to Hillister; plans ordered prepared for topping Highway 45, Huntsville to San Jacinto County line, Walker County; ordered revision of estimates for grading, draining 14 mi., Highway 124, Chambers County; plans ordered prepared for grading, draining, Highway 106, Houston County, Crockett to Trinity County line, and Highway 19, and of gravel north of Crockett to Anderson County line; plans ordered for grading, draining, Highway 150, Cold Springs to Walker County line; authorized topping, Highway 104, Georgetown to Circleville.

Texas—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, issued orders releasing approx. \$650,000 state and Federal funds for immediate use in building and repairing 146 miles of highways in 30 counties.

Tex., Beeville—Bee County taking bids on alternate types hard surfacing 11 mi. road, Beeville west to Live Oak County line, \$140,000; J. S. Fenner, Res. Engr.

Tex., Dallas—City opens bids June 4 for 24-ft. conc. slab, Kessler Outer Blvd., Westmoreland road to Fort Worth Pike.

Tex., Fort Worth—City, O. E. Carr, City Mgr., has preliminary plans for widening Jennings Ave., \$170,110, and Throckmorton St., \$120,320.

Tex., Houston—Harris County Comms. Court has low bid from Gulf Bitulithic Co., 2820 Polk St., for widening La Porte road, since underpass to Deer Park, at \$171,126 on ordinary type, and \$174,274 on curb and gutter. 4-9

Tex., Houston—City, J. M. Nagle, City Engr., will take bids for paving Telephone road between McKinney and Polk Ave.; 30-ft. paving Woodhead St. between North and South Bldgs.

Tex., Marshall—City rejected bids for conc. curbing, conc. guttering, grading, catch basins, manholes, alternate types 11,102 sq. yd. paving; will readvertise. 4-9

Virginia—U. S. Dept. of Agriculture, Bureau of Public Roads, Thos. H. MacDonald, Ch. of Bureau, Washington, D. C., opens bids June 3 for Unit III of Colonial National Monument Parkway, south side of first draw south of officers' quarters of Navy mine depot along shore of York River to point north of Indian Field Creek, approx. 4400 ft., includes fill across Felgate's Creek, approx. 1200 ft. long, all entirely within limits of Navy mine depot, York County, 1,000,000 cu. yd. hydraulic fill (cut measurement).

Virginia—State Dept. of Highways, C. S. Mullen, Ch. Engr., reported, plans 480 miles of highways in 1931, including 55 mi. asphalt, 90 mi. earth, 335 mi. untreated and treated sand-clay, gravel and macadam roads.

Va., Clarendon—Arlington County, C. L. Kinnier, Directing Engr., advises road program for next fiscal year, July 1, 1931, to June 30, 1932, not definitely determined; probably expend \$95,000 for construction and reconstruction work and \$126,500 for general maintenance and betterment work. (See Rosslyn, 5-7.)

Va., Norfolk—City, I. Walke Truxton, City Mgr., plans widening Boush St.

Va., Petersburg—Headquarters Third Corps Area, Office of Quartermaster, 311 St. Paul St., Baltimore, Md., opens bids May 18 for reconstructing drives, Poplar Grove National Cemetery.

W. Va., Bluefield—City has low bid from Lilly Bros. for crosswalks.

W. Va., Huntington—U. S. Veterans' Bureau, Construction Div., Veterans' Bldg., Washington, D. C., has low bid from S. S. Moore, Ashland, Ky., for approx. 1 mi. road to link U. S. veterans' hospital site, Wayne County, with Kellogg-Buffalo County Highway. 4-30

WEST VIRGINIA—State Road Comsn., Geo. E. White, Sec., Charleston, has low bids for 9 roads and bridge in following counties:

Marion—Conaway bridge, superstructure only, Bristol Steel & Iron Works, Bristol, Va., \$26,991;

Barbour—8.51 mi. surface treatment, Philippi-Grafton-Junior-Randolph road, Jones Construction Co., Farmington, Va., \$9048;

Braxton—8.2 mi. conc., Flatwoods-Bulltown road, Georges Construction Co., Uniontown, Pa., \$177,019;

Fayette-Nicholas—10.48 mi. cold tar surface treatment, Gauley-Swiss road, R. F. Kirkham & Co., Charleston, \$16,419;

Logan—14.8 mi. surface treatment, Clothier-Ethel road, R. B. Tyler Co., 1446 Levering Co., Louisville, Ky., \$12,713;

Mason-Putnam—82,000 ft. wire rope guard rail, between Cabell County line-Henderson and Winfield, J. E. McComas, Huntington, and Skeene-McAlpin, Point Pleasant, each bid 26 cents per foot;

Magnolia—6.62 mi. grading, draining, Uffington-Smithtown road, George N. and O. J. Yoho, Cameron, \$125,073;

Monroe—20.6 mi. surface treatment, Salt Sulphur-Petersburg road, Southern Oil & Tar Co., Clay St. and River Road, Louisville, Ky., \$23,071;

Morgan—6.10 mi. grading, draining, shale surfacing, Berkeley Springs-Rock Gap road, Hardy Construction Co., Moorefield, \$47,838. 4-16

W. Va., Huntington—City Comms., Fred E. Reed, Jr., Commr. of Streets, etc., opens bids May 26 for paving Rotary road.

W. Va., Parkersburg—City, L. G. Merrill, City Engr., opens bids May 26 for first group of street paving, costing \$49,350.

Contracts Awarded

Florida—State Road Dept., Robt. W. Bentley, Chmn., Tallahassee, soon start work with convict crew grading State Highway into Tallahassee Beaches at St. Teresa.

Fla., De Funiak Springs—Walton County Comms. let contract to Penton & Mathis, Paxton, at approx. \$14,250, for 3 mi. road, Mosey Head to Valparaiso.

Ga., Augusta—Commanding Officer, Augusta Arsenal, let contract to Claussen-Lawrence Construction Co., 1394 Gwinnett St., for 200 sq. yd. conc. paving and curbing. 4-23

LOUISIANA—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, let contracts for 3 roads in following counties:

Washington-Tangipahoa—6.892 mi. asphaltic, between Franklinton and Amite, Kentucky Road Oiling Co., Louisville, Ky., \$50,142;

West Feliciana—13.49 mi. asphaltic, between St. Francisville and Mississippi line, Kentucky Road Oiling Co., \$71,535;

Sabine—7.3 mi. grading, draining, between Converse and Noble, Guess & Almin, Jonesboro, \$75,554.

Md., Baltimore—City, Nathan L. Smith, Highways Engr., let contract to James Gibbons, Guilford Ave. and University Pkwy., at \$69,955, for flushing streets with bituminous materials. 5-7

Miss., Kosciusko—McAdams-Sallis & Bodone Separate Road Dist. let contract to American Sand & Gravel Co., Citizens Bank Bldg., Hattiesburg, for 3300 tons gravel for 3 mi. roads; hauling let to Hughes & Gully, Louisville, Miss.

Mo., St. Louis—City, Bd. of Public Service, let contracts totaling \$34,305, for conc. paving alleys in blocks 2750, 2942 to following firms: Eyerman Construction Co., 1210 S. Grand Blvd.; Hogan Construction Co., 2915 Delmar Blvd.; A. Lewald, Inc., 5413 Delmar Blvd.; Perkinson Bros. Construction Co., 3237 Carter Ave.; Stiers Bros. Construction Co., 2944 Magazine St.; Creech Construction Co., 5619 Natural Bridge Ave.; W. A. Riley Construction Co., 6635 Delmar Blvd.

Mo., University City, St. Louis—City, Bd. of Aldermen, let contract to Granite Bituminous Paving Co., Rwy. Exch. Bldg., St. Louis, at \$22,315, for paving Delmar Blvd., 1100 ft. wide, conc. base.

OKLAHOMA—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, let contracts for 2 roads in following counties:

Pushmataha—11.019 mi. grading, draining, Blackmore Construction Co., Ardmore, \$77,356;

Alfalfa—8.56 mi. grading, draining, State Highway 45, L. Schultz, Alva, \$21,581.

TEXAS—State Highway Comsn., Gibb Gilchrist, Highway Engr., Austin, let contracts for 11 roads and 7 bridges, aggregating \$1,073,732, in following counties:

Waller—4.7 mi. conc., Highway 20, Lacy Paving Co., Burt Bldg., Dallas, \$89,179;

Grayson—12.6 mi. conc., Highway 5, Froemming Bros. Construction Co., Seymour, \$210,056;

Ellis-Johnson—8.8 mi. grading, draining, Highway 68, grading and small structures, George W. Condon Co., Grain Exch. Bldg., Omaha, Neb., \$36,571; large structures, Hannah Construction Co. and Fred and Don Hall, 2721 Ethel St., Waco, \$29,021;

McLennan—10.6 mi. grading, draining, Highway 44, Dr. F. P. Jones, Jacksonville, \$57,199;

Potter—5.7 mi. grading, draining, Highway 5, Field Bros. & McElvey, Lubbock, \$22,569;

Fannin—798 ft. of construction of 3 conc. bridges, Highway 5, Municipal Engineering Co., Inc., Athletic Bldg., Dallas, \$41,876;

Ellis—124-ft. conc. and steel overpass, Highway 14, over Texas & Midland tracks, John F. Buckner, Cleburne, \$12,267;

Wharton—13.2 mi. conc., Highway 71, Westark Construction Co., McAlester, Okla., \$254,733;

Tarrant—4.2 mi. widening present conc. base and constructing bitum. conc., Highway 1, J. W. Zempster Construction Co., 717 Fisk Bldg., Amarillo, \$101,965;

Caldwell—9.9 mi. triple asphalt surface treatment on gravel base course and double bitum. surface treatment, Highway 80, R. B. Holdfield, 4847 Gurley St., Dallas, \$52,524;

Wheeler—16.8 mi. grading, draining, Highway 152, Field McElvey, Lubbock, \$50,997; 400 ft. of construction of 3 steel, conc. and treated timber bridges, Highway 152, White, Williams & Tatum, Grandfield, Okla., \$16,833;

Fisher—16.3 mi. grading, draining, Highway 83, E. F. Bucy & Sons and C. T. Childs, Rising Star, \$32,261;

Bowie—10.9 mi. grading, draining, Highway 11, J. D. George, Donna, \$45,657. 4-16

Tenn., Memphis—Hall County Comms. Court let contract to McClung Construction Co., Fort Worth Natl. Bank Bldg., Fort Worth, at \$209,883, for 118,285 sq. yd. roads.

Tex., Corpus Christi—City, G. Blackburn, City Engr., let contract to Brown & Root, 1002 Nixon St., at \$23,173, for 1½-in. hot mix rock asphalt on 5-in. rein. conc. surfacing, Tiger St.

Tex., Fredericksburg—City let contract to Alamo Paving Co., 321 Dawson St., San Antonio, for paving 9000 sq. yd.

Tex., San Angelo—City, E. E. Courier, City Mgr., let contract to L. E. Whitman & Co., at \$44,000, for 7 56-ft. blocks rein. conc. paving.

Tex., Turkey—City, V. Fuston, Sec., let contract to Panhandle Construction Co., Lubbock, at \$31,598, for conc. curbing, conc. guttering, 6-in. conc. paving 10,262 sq. yd.

Va., Fort Myer—Commanding Officer, Washington Quartermaster Depot, Washington, D. C., let contract to Union Paving Co., Broad and Stiles Sts., Philadelphia, Pa., at \$6.88 a ton for laying bitum. paving, Arlington Cemetery. 4-16

Va., Richmond—City, R. Keith Compton, Dir. Public Works, let contract to C. M. Hanley, 23 S. Beach St., at \$30,440, for smooth paving, curbing and guttering.

WEST VIRGINIA—State Road Comsn., Geo. E. White, Sec., Charleston, let contracts for 5 roads in following counties:

Wayne—11.3 mi. surfacing, Marrowbone-Bull Creek road, Southern Ohio Quarries Co., Chillicothe, Ohio, \$9286;

Calhoun-Ritchie-Pleasants—123,000 ft. wire rope guard rail, Route 16, Sam G. Polin, 509 Ogden Ave., Fairmont, \$31,857;

Harrison—9.62 mi. surface treatment, Clarksburg-Weston road, R. B. Tyler Co., 1446 Levring St., Louisville, Ky., \$113,468;

Ritchie—4.56 mi. surface treatment, Smithville-Calhoun County line road, C. V. Recor & Sons, Muncie, Ind., \$4606. 4-16

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.

Md., Baltimore—Bd. of Awards receives bids May 20 for Bayview Syphon and Herring Run sewer; Sanitary Contr. 270.

Md., Baltimore—Thompson Construction Co., Relay, reported, low bidder at \$39,973 for sewers, Storm Water Contr. 164. 4-23

Md., Baltimore—Bd. of Awards receives bids May 21 for furnishing and delivering vit. terra cotta sewer pipe, Material Contr. No. 83. See Want Section—Bids Asked.

Md., Fort George G. Meade—United States Army Quartermaster's Office will soon take bids for sewers; cost \$10,000.

Okla., Sulphur—W. L. Scott, Sulphur, reported, has contract for sewage disposal plant, cost \$37,928.

Tenn., Memphis—Riley Contracting Co., 110 N. 7 St., St. Louis, Mo., reported, has contract at \$169,119 for laying 57 miles of sewers in Hollywood and N. Memphis. 5-11

Tenn., Memphis—City votes July 7 on \$400,000 sewer and drainage bonds. 4-8

Tex., Austin—W. G. Cullem, reported, has contract at \$10,412 for sewers in Gregory St. and Hackberry St.

Tex., Dumas—City, N. McDade, Mayor, voted \$70,000 sewer bonds.

Tex., Houston—Russ Mitchell, Inc., Petroleum Bldg., reported, low bidder at \$23,489, for storm sewers in West Gray Ave. between Taft and Valentine Sts. and at \$5927 for storm sewer in N. Main St. between Brooks and Foundry Sts.; Elder Construction Co. for storm sewers in N. Main St.

Va., Langley Field, Hampton—Constructing Quartermaster, Fort Monroe, rejected bids for construction of sewage pumping plants and force mains in heavier-than-air section of Langley Field; date of new bids not set. 3-19

Va., Richmond—Sittingdine-Carneal-Davis Co., 1500 W. Moore St., reported, has contract for supplying terra cotta pipe; Southside Brick Co., 20 N. 8 St. for sewer bricks; O. G. McGee & Son, 232 E. Main St., for sewer castings.

Telephone System

Fla., Jacksonville—Eastern Air Transport, Inc., 225 Broadway, New York, reported, construct radio station for communication with mail and passenger planes operated by company; leased site northwest of Municipal Airport on Dunn's Ave.; expend \$10,000 for construction and equipment; later plans constructing towers at Orlando and Miami.

N. C., Asheville—Mountain Radio Co., capital \$100,000, incorporated; J. M. Wiggins, Summit St. Apts., Winston-Salem.

N. C., Winston-Salem—Carolina Radio Co., capital \$100,000, incorporated; J. M. Wiggins, Summit St. Apts.

Tex., Tyler—East Texas Broadcasting Co., capital \$25,000, incorporated; H. M. Harrison, A. F. Sledge.

Virginia—Chesapeake and Potomac Telephone Co., Richmond, reported, expend \$86,245 for additional telephone facilities in northern section of Norfolk, install additional central office equipment to operate Norfolk-Hampton-Richmond teletypewriter circuit connecting Hampton Roads Naval Base, Langley Field, and Richard E. Byrd Flying Field; additional trunk lines between Richmond and Fairfield and new underground and aerial construction in Country Club of Virginia area, at cost of \$57,655 also authorized; project is part of company's \$4,000,000 Virginia construction program. 2-19

Textile Mills

Ga., Atlanta—Exposition Cotton Mills, 794 Marietta Road, N. W., reported, closed contract with American Moistening Co., 248 Highland Ave., N. E., for humidifying equipment and to J. M. Clayton Co., 63 Cone St., N. W., for electrical equipment; work under direction of R. F. Goodroe, Gastonia, N. C. 10-9

N. C., Concord—Hoover Hosiery Co., reported, construct additional building; double present capacity.

N. C., Gastonia—Ranlo Mfg. Co., Third Natl. Bank Bldg., reported, install dye plant to be operated in connection Modena plant in Gastonia.

N. C., Kernersville—Southern Silk Mills, Inc., reported, recently purchased rayon warp sizing machine through Carolina Specialty Co., 122 Brevard Court, Charlotte.

N. C., Laurinburg—McNair Investment Co., reported, erect textile building to be leased to Morgan Cotton Mills, Inc., operating textile mills at Laurel Hill, Marshallville, Millen and Quitman, Ga.; 100x250 ft.; 1 story; manufacture twine, laundry bags and spun and woven specialties.

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification.

Ga., Cornelia—Robert & Co., Inc., Archts.-Engrs., Bona Allen Bldg., Atlanta, advises

that water works development is still inactive; nothing definite about bond issue. 10-23

Ky., Louisville—Following bidders estimating on reservoir for Louisville Water Co., Inc., John Chambers, Ch. Engr. and Supt.; Northern States Constr. Co., 312 Endicott Bldg., St. Paul, Minn.; Whiting Turner Constr. Co., Baltimore, Md.; Booth & Flinn, 1942 Forbes St., Pittsburgh, Pa.; E. H. Latham Co., 447 Neilston St., Columbus, Ga.; Henry Bickel Co., Walnut and Garden Sts., Louisville, Ky.; Maxon Constr. Co., Dayton, O.; Pitt Construction Co., Starr Bldg., Pittsburgh, Pa.; Middle States Construction Co., 1183 Essex Ave., Columbus, O.; Engstrom & Wynn, 1117 Chapline St., Wheeling, W. Va.; Gannette, Seelye & Fleming, Harrisburg, Pa.; M. Hayes & Sons, 209 S. LaSalle St., Bates & Rogers, 111 W. Washington St., John E. Ericsson Co., 123 W. Madison St., Nelson Water Service Co., 3240 S. Michigan Ave., J. L. Simmons Co., Inc., 4010 W. Madison St., Folwell Engr. Co., 333 N. Michigan Ave., Ellington-Miller Co., 25 E. Jackson Blvd., Mellon-Stewart Co., 333 N. Michigan Ave., MacDonald Engineering Co., 1 N. LaSalle St., S. A. Healy Co., 39th St. and 52nd Ave., all Chicago, Ill.; G. E. Tillman, Centralia, Ill.; H. G. Christman-Burke Co., 1009 Fisher Bldg., Detroit, Mich.; Cope & Fisher, 420 S. Franklin St., Decatur, Ill.; L. W. Hancock, Louisville Trust Bldg.; The Kerpen Const. Co., 123 Valencia Ave., Cincinnati, O.; Munroe & Westcott, Inc., Wentagh, N. Y.; W. E. Callahan Constr. Co., Arcadie Bldg., St. Louis, Mo.; A. Phelps & Sons, 6319 Michigan Ave., Detroit, Mich.; Gauger Const. Co., Fidelity Bank Bldg., Memphis, Tenn.; Porter Bros. Corp., First Natl. Bank Bldg., Detroit, Mich.; A. Bentley & Sons Co., 201 Belmont Ave., Toledo, Ohio. 3-26

Ky., Versailles—Howard K. Bell, Constl. Engr., advises water works improvements postponed until after election in Nov.

La., New Orleans—Sewerage and Water Bd. receives bids May 19 for repairs to roof of purification building at Algiers water plant.

Md., Baltimore—City voted \$7,500,000 water bonds; water program provides for beginning of work on acquisition of water rights along the Patapsco and Deer Creek and property for reservoir, dam and filtration plant in vicinity of Reisterstown; E. G. Rost, Water Engr. 4-23

Md., Baltimore—Hardie-Tynes Mfg. Co., 800 N. 28th St., Birmingham, Ala., reported, low bidder at \$12,118, for two 36-in. discharge needle valves for Dept. of Public Works; Chas. F. Goob, Ch. Engr., City.

Md., Cumberland—The J. E. Greiner Co., Constl. Engrs., 1201 St. Paul St., Baltimore, advises plans and specifications for dam at Cumberland will be available for contractor May 8 and bids will be received in Cumberland by Mayor and Everts Creek Water Co. on May 27; dam site is in valley of Everts Creek in Bedford County, Pa., about 2 miles north of Gordon Dam and about 12 miles north of Cumberland; solid conc. gravity type with maximum height about 80 ft. and length 726 ft.; bridge is rein. conc. arch with 22 ft. roadway and two 4 ft. wide sidewalks; relocated roads are paved 10 ft. wide and graded 24 ft. wide and include necessary drainage, culverts, etc., and will have total length of about 2 miles. 4-30

Md., Curtis Bay, Baltimore—Mullan Contg. Co., 3945 Greenmount Ave., reported, has contract for masonry wall tank enclosure; Atlantic Terra Cotta Co., 25 W. 44th St., New York, for terra cotta; brick work not let; cost \$44,989. 4-23

Md., Frederick—City has plans submitted by Whitman, Requaardt & Smith, Constl. Engrs., Baltimore Trust Bldg., Baltimore, for first section of Linganore Creek water supply; will call for bids in 2 sections, to cover work and for furnishing and installing equipment for filtration plant; let contract to U. S. Cast Iron Pipe and Foundry Co., Philadelphia, Pa., for pipe for city section, beginning at Second and Bentz Sts.; Chapman Valve Mfg. Co., Indian Orchard, Mass., has contract for valves and Leadite Co., Inc., Land Title Bldg., Philadelphia, Pa., for joining material. 5-7

Md., Myersville—Town votes about June 1 on \$40,000 bonds for improvements to water supply; plan dam, pipe line, chlorinator, etc. 3-26

Miss., Hattiesburg—Volz Construction Co., Baltimore Bldg., Memphis Tenn., reported, has contract for constructing collecting mains; Thos. H. Allen, Constl. Engr., 65 McCalla Ave., Memphis, Tenn.

Mo., St. Joseph—St. Joseph Water Co., lay 6-in. rein. water main to S. St. Joseph and the stockyards, 10,200 ft. long.

N. C., Hickory—Brookford Mills Co., D. L. Howard, Mgr., reported, let contract to Moser and Bumgarner, for improvements to mill dam; will reinforce dam 213 ft. long, add 15-in. conc. and gravel backing.

N. C., Mount Holly—American Yarn & Processing Co., reported, plans rebuilding burned pumping plant and filter house.

Okla., Wewoka—City, J. E. Howard, City Mgr., advises not planning any bond issue. 4-16

Tenn., Nashville—City receives bids May 19 for 2 new pumping units, City Pumping Station; increase daily pumping capacity 20,000,000 gal.; improvement will consist of high lift and low lift unit; cost \$500,000; also opens bids May 12 for construction of 8-in. water main in University St. from Washington to Carroll St.

Woodworking Plants

Md., Easton—Harry Clark, George Walker, both Easton, and W. H. Hickerson, New York, reported, have option on furniture plant.

N. C., Lillington—Lillington Furniture Co., capital \$50,000, incorporated; S. H. Wilburn, G. D. Monroe.

FIRE DAMAGE

Ark., Arkansas City—Kuntz Clothing Store, Kirkpatrick's Furniture Store, Ormiston's Shoe Store, 212-16 St. Summit St.; loss \$100,000.

Ark., Gravette—Paul V. Dorsett's residence.

Ark., Wabbaseka—Jefferson County Training School No. 2, near Wabbaseka; loss \$12,000; R. B. Doggett, Prin.

Ga., Cartersville—Bartow Hotel; loss \$15,000.

Ky., Lexington—Dr. Scott D. Breckinridge's residence, Russell Cave Pike; loss \$11,000.

Ky., Mayfield—A. T. Anderson's tobacco warehouse, also warehouse owned jointly by H. H. Adams and A. T. Sanderson; loss \$10,000.

Ky., Shelbyville—Dewey Hardin's ice cream plant.

Ky., Williamsburg—Whitley County court house; loss \$50,000; M. M. Criscillis, County Judge.

La., Glenmora—J. O. Tarbarlet's residence. Miss., Hattiesburg—Draughn Bldg.; loss \$15,000.

Mo., Banks—Banks High School; loss \$20,000.

Mo., St. Louis—Plant of Mound City Roofing Tile Co., 3301 Morgan Ford Rd.; loss \$100,000.

N. C., Charlotte—Charles Moody Bldg. on E. Trade St.; loss \$50,000.

N. C., Reidsville—A. Bane's Department Store, Scales and Gilmer Sts.; loss \$50,000.

S. C., Conway—Sales stables of Jenkins & Richardson, Laurel St. and Third Ave., owned by G. B. Jenkins, Fayetteville, N. C.

Tenn., Nashville—Unit of C. E. Ingalls Lumber Co., 61 Ave. N. and Centennial Blvd.; loss \$50,000.

Tex., Chandler—Wideman Bldg. housing postoffice, drug store, barber shop and meat market; loss \$10,000.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

La., Plaquemine—Additional contractors estimating on lodge bldg. for Columbia Catholic Assn., bids May 20; J. A. Petty & Sons,

Inc., Audubon Bldg., New Orleans; Jas. McDaniel, Crowley; Clifford H. King, Prescott Lane, Baton Rouge; G. L. Whitaker & Son; G. E. Marix, both Plaquemine; Wm. R. Burke, Archt., Balter Bldg., New Orleans. 5-7

La., Shreveport—El Karubah Temple, A. A. O. N. M. S., selected Jones, Roessle, Olschner & Weiner, Ardis Bldg., as architects for \$30,000 recreation camp, Cross Lake; brick, hollow tile, stone trim, 2 stories, 35x140 ft. 4-30

Tex., Sherman—Woodmen Circle Home receives bids May 18 at office Clyde & Rolfe, Archts., 308 Commercial Bldg., for rein. conc., brick and tile cottage; 2 stories and basement, 43x85 ft. 2-19

Bank and Office

Ark., Clarksville—Farmers National Bank purchased Bank of Clarksville bldg., Main St.; remodel.

D. C., Washington—American Pharmaceutical Assn., Dr. E. F. Kelly, Sec., 10 W. Chase St., Baltimore, Md. have working drawings completed for \$500,000 headquarters bldg.; date of opening bids indefinite; steel with limestone or marble, 1 story and ground story, 120x70 ft., central section 70x70 ft. with 2 wings, oil heat; John Russell Pope, Archt., 542 Fifth Ave., New York. 4-17-30

Ga., Atlanta—First National Bank, John K. Ottley, Pres., reported, remodel first floor of bldg., Edgewood and Pryor Sts., N. E.; Pringle & Smith, Archts., 1010 Norris Bldg.

Tenn., Nashville—American National Bank has permit to remodel first floor and install vault, 613 Church St.; \$10,500.

Tex., El Paso—E. P. Greenwood, Kirby Bldg., Dallas, purchased Two Republics Bldg., Texas and Stanton Sts.; expend \$25,000 to remodel and refinish; may change name.

Churches

Ala., Montgomery—Court St. Methodist Church, A. C. Davis, Chmn., Bldg. Comm., selected Geo. Awsumb, Denman Bldg., Memphis, Tenn., as architect for \$350,000 bldg.; Gothic type.

Tenn., Bulls Gap—Methodist Church rebuild burned structure.

City and County

Ala., Anniston—Calhoun County Bd. of Revenue, J. D. Henry, Chmn., receives bids June 5 to rebuild court house damaged by fire; \$100,000 to \$125,000; fireproof, 3 stories and basement, steel windows, red tile roof, marble in corridors, acoustical treatment, ventilation; Lockwood & Poundstone, Archt., 101 Marietta Bldg., Atlanta, Ga., and M. R. Thomas, Asso. Archt., Anniston. 2-19

Ark.-Tex., Texarkana—Miller County Comms.' Court has low bid at \$135,760 from Oats Building & Construction Co., for jail; Witt, Seibert & Halsey, Archts., Texarkana Natl. Bk. Bldg. 4-2

Ark., Russellville—Pope County Bd. of Comms. have low bid from J. H. Reddick, Kennedy Bldg., Fort Smith, for \$150,000 court house; plumbing and heating, Russellville Plumbing & Heating Co.; H. Ray Burks, Archt., Wallace Bldg., Little Rock. 4-23

Ga., Atlanta—Fulton County Bd. of Comms. considers selling present almshouse property, Powers Ferry Rd., purchasing new site and erecting almshouse.

Mo., Independence—Jackson County, Harry S. Truman, Judge, votes May 26 on \$8,700,000 bonds, including \$4,200,000 for 2 court house bldgs., one in Kansas City and one in Independence. 3-19

Okl., Tulsa—City Comsn. approved preliminary plans for central fire alarm station, Eighth St. and Madison Ave.; \$225,000 including equipment; Smith & Senter, Archts., Philtower Bldg. 12-25

Tenn., Memphis—City Council may erect 40x60-ft. auditorium, Walker Ave. and Third St.

Tex., Bay City—Matagorda County Bd. of Comms., W. E. McNabb, County Judge, erect brick, tile, rein. conc., struct. steel and cast stone jail; 3 stories, 45x75 ft., metal lath and plaster, steel sash, dumb waiter, Venetian blinds, cement, tile and wood floors; Harry D. Payne, Archt., 714 Kirby Bldg., Houston; bids received May 14.

Tex., Haskell—Haskell County Bd. of Comms. remodeling court house.

Tex., Jasper—Jasper County Bd. of Comms. has low bid at \$40,922 from H. H. Knight, Beaumont, for 2-wing addition to court house; DeFee & White, Archts., M. & M. Bldg., Houston. 4-9

Tex., Palestine—Anderson County Comms.' Court probably call for bids within 2 weeks for \$60,000 jail; brick and rein. conc., 72x55 ft., probably 3 stories, tool-proof steel frame; Theo. S. Maffitt, Archt., 510 N. Sycamore St. 4-23

Tex., Port Arthur—Governor Sterling signed bill authorizing expenditure of \$150,000 for sub-court house at Port Arthur; bond election will be called. Address Jefferson County Bd. of Comms., Beaumont.

Tex., San Antonio—Bexar County, W. A. Wurzbach, Judge, considers erecting \$50,000 fireproof training school for delinquent boys, Bexar County Farm; Harvey P. Smith, Archt., Natl. Bk. of Commerce Bldg.

Tex., Waco—City plans fire alarm headquarters and drill tower, 14th St. and Columbus Ave.; additional equipment.

Va., Danville—City, C. L. Scott, Engr., votes June 5 on \$150,000 auditorium-armory bonds; Bryant Heard, Archt., Masonic Temple Bldg. 12-4

Dwellings

D. C., Washington—Ralph A. Xander, 1301 Massachusetts Ave., erect stone, hollow tile, half-timber and stucco residence, Ellicott St.; 2½ stories; plans by C. E. Dillon, 1296 Florol St., N. W.; receiving bids.

Fla., Coral Gables, Miami—Edwin Belcher, care Belcher Oil Co., 1217 Biscayne Blvd., Miami, erect addition to residence, 737 N. Greenway Drive; 5 baths, etc.; receiving bids.

Fla., Miami—Dr. Geo. N. MacDonnell, 3920 Palmarito, Coral Gables, erect rein. conc., conc. blocks and stucco residence, S. Bayshore Drive; 1 story, 114x55 ft., 2 baths, steel and wood sash, Quarry Key stone terrace, tile and oak floors, orna. iron and stone, coral rock; Arthur Laidler-Jones, Archt., 805 Huntington Bldg., Miami; owner builds; address Mrs. MacDonnell.

Fla., Miami Beach—Lenox Co., 846 Lincoln Rd., plans 4 dwellings as first unit of development; B. Kingston Hall, Archt., 609 Collins Ave.; nothing definite yet.

Fla., Miami Beach—Fisher Properties, Inc., Lincoln Rd., may erect number dwellings near Alton Rd.

Fla., St. Petersburg—Clarkson Homes, Inc., Central Natl. Bk. Bldg., have permit for \$10,000 dwelling, 2222 Brevard Rd., North; tile veneer, stucco, 2 stories, 4 baths.

Ga., Atlanta—J. R. Rhodes, 823 Virginia Ave., N. E., has low bid at \$11,588 from Yost Construction Co., Candler Bldg., for residence, Lullwater Rd. 3-19

Ga., Blakely—Mrs. J. S. Sherman receives bids May 19 for conc. and brick residence; Indiana or Alabama limestone or cast stone trim, 2 stories and basement, 100x47 ft., struct. steel, interior marble and tile work, tile, cement, hardwood and linoleum floors; T. Firth Lockwood, Archt., 211 Murrah Bldg., Columbus, Ga.; following contractors estimating: H. H. Brown, Dothan, Ala.; E. S. Huggers & Co., 205 Parallel St., Montgomery, Ala.; Daniel Lumber Co., LaGrange, Ga.; J. B. Adams, Tifton, Ga.; J. H. MacKintosh, Sarasota, Fla.; Dolph Owens, Troy, Ala.; plumbing and heating estimators include L. J. Lehotay, Opelika, Ala., and C. Ed Cooper, Columbus, Ga. 11-6

La., New Orleans—Mrs. R. F. Duelfer, Sr., 3305 Franklin Ave., considers erecting residence, Picheloup Place near Carrollton Ave.; contract not let.

Md., Baltimore—John W. Owens receives bids May 19 at office Wyatt & Nolting, Keyser Bldg., Archts. for residence; brick, 2½ stories, 35x50 ft.; following contractors estimating: L. L. Chambers, Inc., 36th St. and Roland Ave.; M. L. Robertson, 5308 Chestnut Ave.; Thos. Hicks & Sons, 106 W. Madison St.; Clarence L. Jarvis, 3704 Woodbine Ave.; M. G. Davis, 904 W. 36th St.; Clifton K. Wells, 3538 Old York Rd.; C. A. Cullings, 692 Gladstone Ave.

Md., Baltimore—Delano J. Fitzgerald, 306 E. 32nd St., receives bids May 18 at office Machen & Dixon, Archts., 312 N. Charles St., for \$15,000 residence, Homeland; brick, 2½ stories, 39x50 ft.; heating under separate contract; address Henry Adams, Engr.; following general contractors estimating: Robt. D. Forbes, 733 E. 21st St.; Willard E. Harn, Inc., 2314 Oak St.; Frank Macey, 5001 Midwood Ave.; Ralph MacMurray, 39th St. and Old York Rd.; Phillip S. Morgan, 514 St. Paul St.; Earl G. Taylor, 3125 Abell Ave., all Baltimore; Wm. H. Sands, Towson. 5-7

Md., Ruxton, Baltimore—Fredk. L. Wehr, 3829 Beech Ave., erect residence, Ruxton.

Mo., St. Louis—Ogden D. Williamson, 29½ Blackmor Place, erect residence and 3-car garage, Lake Forest; 10 rooms, 3 baths; Robt. Francis Denny, Archt.

N. C., Charlotte—O. Vance Hoke, 1905 Dilworth Road, W., erect \$25,000 residence; L. H. Asbury, Archt., 1514 E. Fourth St.; following contractors estimating: Southwestern Construction Co., 210 W. Second St.; Blythe & Isenhour, 133 Brevard Court; O. N. Payne, Little Construction Co., both

Builders Bldg.; Ernest Foard, 304 W. Westmoreland Ave.; Thomason-Bartholomew Co., Piedmont Bldg.; Goode Construction Co., 11 E. Fifth St.; Standard Construction Co., Ind. Bldg.; J. A. Gardner, 211½ N. Tryon St.; A. Lloyd Goode, Inc., Inc., 2435 Cherokee Road; C. L. Mason, Commercial Bk. Bldg.; M. R. Ritch, 404 Baldwin Ave.

N. C., High Point—Chas. L. Kearns has permit for \$10,000 residence, Rockford Drive.

Tex., Dallas—Webster Atwell, Republic Bank Bldg., has permit for \$11,000 residence, 3630 Overbrook St.; brick veneer, 2 stories.

Tex., Uvalde—H. P. Hornby remodel frame residence; 1 story, oak and linoleum floors, asbestos shingle roof; Will N. Noonan Co., Archt., Builders Exch. Bldg., San Antonio; pans out.

Va., Richmond—B. W. Showalter, 2820 Hawthorne Ave., submitted low bid at \$17,770 for 2 dwellings, Hillcrest; Baskerville & Lambert, Archts., Central Natl. Bank Bldg.

Va.-Tenn., Bristol—Frank W. Defriece has permit for \$18,000 residence, The Knobs.

Government and State

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids May 18 for excavation for \$8,750,000 U. S. Archives Bldg., Pennsylvania Ave., L. Seventh and Ninth Sts., N. W.; fireproof, stone, 7 stories; John Russell Pope, Archt., 542 Fifth Ave.; H. G. Balcom, Engr., 10 E. 47th St.; Clyde R. Place, Mech. Engr., 420 Lexington Ave., all New York; foundation bids next, then superstructure. 11-13

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., opens bids in duplicate May 19 for clearing site for \$4,500,000 Interstate Commerce Commission bldg.; drawings from above; Arthur Brown, Jr., Archt., 251 Kearny St., San Francisco, Calif. 2-5

D. C., Washington—District Comms., Dist. Bldg., have low bid at \$10,450 from Bahen & Wright, 916 R. I. Ave., N. E., for sheds and facilities, Eastern and Western markets. 4-30

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., will receive plans between May 11 and May 16 for \$865,000 bldg. for Public Health Service; marble and Indiana limestone, 3 stories, 260 ft. on B St., 145x50 ft. on 19th and 20th Sts., and central rear wing 48x76 ft.; J. H. DeSibour, Archt., 1200 Fifteenth St., N. W. 1-15

D. C., Washington—Architect of The Capitol, David Lynn, have plans ready some time in July for \$6,500,000 annex to Library of Congress; 5 stories; Pierson & Wilson, Archts., 1621 Connecticut Ave.; Alex. B. Trowbridge, Constl. Archt., 1028 Connecticut Ave. 1-1

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., having plans drawn by Bennett, Parsons & Frost, 80 E. Jackson Blvd., Chicago, Ill., for \$3,000,000 bldg., Constitution and Pennsylvania Aves., Sixth and Seventh Sts.; limestone, 7 stories above grade. 12-3

Fla., Jacksonville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., having plans drawn by Marsh & Saxelby, Archts., Consolidated Bldg., Jacksonville, for \$1,500,000 post office. 4-17-30

Ga., Fort Benning—Additional prospective estimators on units E, F, G and H of Barracks No. 2, bids May 28 by Constructing Quartermaster: A. K. Adams Co., 542 Plum St., N. W., Atlanta, Ga.; J. M. Raymond Construction Co., Hildebrandt Bldg., Jacksonville, Fla.; Weaver & McGill, General Bldg., Knoxville, Tenn.; Coath & Goss, Inc., 549 W. Randolph St., Chicago, Ill.; Langston Roofing Co., Inc., Live Oak, Fla.; Applewhite & Lawler Co., C. & S. Bank Bldg., Atlanta; A. S. Bacon & Sons, Schwartz Ave., Savannah, Ga.; Decatur Iron & Steel Co., Decatur, Ala.; W. H. Weatherford Plumbing & Heating Co., 603 Broad St., Augusta, Ga.; L. J. Lehotay, Opelika, Ala.; Crane Co., 1225 I St., N. W., Washington, D. C. 5-7

Ky., Louisville—Additional prospective estimators on \$2,985,000 post office, court house and custom house, bids June 1 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.: P. Jungdaus Co., 825 Massachusetts Ave., Indianapolis, Ind.; Libbey & Libbey Co., 244 Second Ave., South; Pike & Cook Co., Inc., 416 S. Fifth St., both Minneapolis, Minn.; George A. Fuller Co., 32 W. Randolph St.; Coath & Goss, 1109 S. State St.; E. W. Sprout Construction Co., 2001 W. Pershing Rd.; I. Balkin Co., 1850 W. Austin Ave., all Chicago, Ill.; Boyajohn Barr, Inc., Main and Front Sts., Columbus, O.; S. & W. Construction Co., Shrine Bldg., Memphis, Tenn.; Wortham Construction Co., Inc., Starks Bldg.; Geo. H. Rommel Co., Inc., 954 Logan St.; Struck Construction Co., 147 N. Clary St.; Henry Bickel Co., Walnut and Garden Sts.; Geo. H. Rommel Co., 954

Logan St., all Louisville, Ky.; Fanning & Sweeney, Greensboro, N. C.; Barge-Thompson Co., 135 Ellis St., Atlanta, Ga.; National Construction Co., Florence, S. C.; Thos. G. Sperling & Co., Inc., 103 Park Ave., New York; Adams Construction Co., Washington; Ferro Concrete Construction Co.; Hodges Construction Co., 901 Chamber of Commerce; J. & F. Harig Co., 1425 Queen City Ave., all Cincinnati, O.; Ed. S. Moore & Son, 610 U. Washington St., Kokomo, Ind.; Worsham Bros., Knoxville, Tenn.; H. G. Christman-Burke Co., 1009 Fisher Bldg., Detroit, Mich. 5-7

La., Opelousas—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids in duplicate June 4 for extension and remodeling court house and post office; \$85,000, 3 stories, 37x74 ft.; drawings from office Supvg. Archt. 2-5

Md., Chestertown—Maryland National Guard, Adjt.-Gen. Milton A. Reckord, Army Place and Howard St., having plans drawn by Wm. Gordon Beecher, 12 E. Pleasant St., Baltimore, for armory; brick, stone trim, 1 story; about \$50,000; plans ready in about a week.

Miss., Lumberton—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids in duplicate June 2 for post office; drawings from office Supvg. Archt.

Miss., Vicksburg—Quartermaster, Fourth Corps Area, Fort McPherson, Ga., has low bid from Louis A. Gily, Laurel, Miss., for service bldg., Vicksburg National Cemetery.

Mo., Boonville—State Legislature passed bill authorizing \$65,000 expenditure at State Reformatory.

Mo., Kansas City—Additional prospective estimators on post office, bids May 15 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.; General Constr.—DeVault & Deltrick, Inc., Massillon Rd., Canton, O.; Schuler & McDonald, 1723 Webster St., Oakland, Calif.; A. W. Kutsche & Co., 2111 Woodward Ave., Detroit, Mich.; Elevators—Millner Co., 4660 Easton Ave., St. Louis, Mo.; Kimball Bros., Ninth St. and 11th Ave., Council Bluffs, Iowa; Montgomery Elevator Co., Moline, Ill.; Warner Elevator Manufacturing Co., 2613 Spring Grove Ave., Cincinnati, O.; Graves Elevator Co., Inc., Box 56, Rochester, N. Y.; Mail Handling Equipment—Great Western Manufacturing Co., 1400 W. 12th St., Kansas City, Mo.; R. E. Briggs, Jeffrey Manufacturing Co., Columbus, O.; Industrial Drives, Inc., 89 Beacon St., Worcester, Mass.; M. J. Boyle & Co., 105 W. Monroe St., Chicago, Ill. 5-7

Mo., Kansas City—State Highway Comsn., State Highway Bldg., Jefferson City, T. H. Cutler, Ch. Engr., receives bids until May 21 for Division office bldg. and garage bldg.; plans from Comsn., or from Div. Engr., Kansas City.

N. C., Fort Bragg—Constructing Quartermaster, Capt. Lawrence L. Simpson, receives bids in triplicate until June 2 for hospital and utilities, Fort Bragg; information on request.

N. C., Rutherfordton—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., probably call for bids in few weeks and start work in July on \$75,000 to \$100,000 post office. 1-1

S. C., Rock Hill—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids in duplicate June 3 for post office, court house, etc.; rein. conc., brick and tile, store trim, struct. steel, 3 stories, marble and tile work, \$275,000; drawings from office Supvg. Archt. 12-11

Va., Arlington National Cemetery—Constructing Quartermaster, 2335 Munitions Bldg., Washington, D. C., has low bid at \$39,870 from Lee T. Turner, 1366 Perry Place, N. W., Washington, for potting house, green house and heating plant, Arlington National Cemetery. 4-30

Va., Fort Myer—Constructing Quartermaster, Room 2335 Munitions Bldg., Washington, D. C., soon call for bids for double company officers' quarters and double non-commissioned officers' quarters.

Va., Langley Field, Hampton—Constructing Quartermaster, Fort Monroe, Va., has low bid at \$146,443 from Jewell-Riddle Co., Sanford, N. C., for hospital, Langley Field. 4-16

Va., Quantico—Additional prospective estimators on disciplinary barracks, Marine Barracks, bids (date not determined) by Navy Dept., Bureau of Yards and Docks, Washington, D. C.; Worsham Bros., Medical Arts Bldg., Knoxville, Tenn.; Crane Co., 1225 I St., N. W., Washington; Decatur Iron & Steel Co., Albany Station, Decatur, Ala.; J. F. Fitzgerald Construction Co., Inc., 38 Chauncy St., Boston, Mass.; Huntington & Guerry, Inc., Box 408, Spartanburg, S. C.; Ralph Sollitt & Sons Construction Co., 228 N. LaSalle St., Chicago, Ill. 5-7

Hospitals, Sanitariums, Etc.

Ga., Waycross—Additional contractors estimating on \$150,000 hospital, bids May 25 by Ware County Bd. of Comms.; General—Grahn Construction Co., Red Rock Bldg., Atlanta, Ga.; Huber Construction Co., Moultrie, Ga.; Fiske-Carter Construction Co., Spartanburg, S. C.; Samford Bros., 301 Washington Ave., Montgomery, Ala.; Angle-Blackford Co., Amer. Exch. Natl. Bk. Bldg., Greensboro, N. C.; Plumbing and Heating—Walter Denson, 2916 Olga Place; D. A. Mayfield & Son, 131 E. Bay St.; J. M. Gregory, 5 Florida Ave., all Jacksonville, Fla.; J. D. Points & Co., Palatka, Fla.; Poe Piping & Heating Co., 108 S. Main St., Greenville, S. C.; Electrical—Frank B. Miller Electric Co., 487 Riverside Ave.; Schraedel Electric Co., both Jacksonville; H. C. Biglin, 138 Marietta St., N. W., Atlanta; Byck Electric Co., 137 Savannah, Ga.; H. E. Lowe Electric Co., 131 Cotton St., Macon, Ga. 5-7

Miss., Jackson—Mississippi Building Comsn., R. L. Brown, Sec., New Capitol Bldg., has low bids as follows for 8 bldgs. for Negro Group No. 1, \$5,000,000 Mississippi Insane Hospital: W. J. McGee & Son, Lamar Bldg., Jackson, at \$55,912 on hospital bldg.; Lockard & Vaughan, Kidder Bldg., Meridian, at \$57,082 on dining hall and kitchen; M. T. Reed Construction Co., Belzoni, at \$36,833 on 2 patients' cottages and at \$23,733 on convalescent cottage No. 1; Oden & Glenn, Carter Bldg., Hattiesburg, at \$35,535 on epileptic cottage No. 1, and at \$35,400, on epileptic cottage No. 2; Beckelheimer & Small, Hattiesburg, at \$23,500 on convalescent cottage No. 2; N. W. Overstreet, Archt., Standard Life Bldg., Jackson; Vinson B. Smith, Advisory Archt., Gulfport. 4-16

Miss., Jackson—State Hospital Removal, Improvement and Land Sale Comsn., receives bids until May 29 at New State Capitol for following for \$5,000,000 Mississippi Insane Hospital: Tuberculosis bldg., supt.'s home, doctor's apartment, 3 patients' cottages, tropical house, power generator sets, conc. drain to lake, entrance structures and finish hardware; plans on file at office Secretary of Comsn. at Capitol and may be had from N. W. Overstreet, Standard Life Bldg., Jackson; Vinson B. Smith, Advisory Archt., Gulfport. 5-7

Mo., Fulton—State Legislature passed bill authorizing \$292,000 expenditure to erect light, heat and power plant and \$50,000 expenditure to fireproof bldgs., State Hospital No. 1.

Mo., St. Joseph—State Legislature passed bill authorizing \$50,000 expenditure to fireproof State Hospital.

Mo., St. Louis—Board of Public Service erect \$1,200,000 negro hospital, Goode and Kennerly Sts.; Albert Osburg, Archt., 3654 Meramec St., advises sketches not approved and plans will not be finished before latter part of 1931; L. R. Brown, Engr., 301 City Hall. 12-6-28

Okla., Shawnee—Department of Interior, Office of Indian Affairs, Washington, D. C., rejected bids for \$60,000 infirmary, Shawnee Sanatorium; will call for new bids. 4-30

Tex., Abilene—State Bd. of Control, Claude D. Teer, Chmn., Austin, about ready for bids for \$50,000 dormitory, Abilene State Hospital; brick, stone, struct. clay tile and rein. conc., 2 stories; David S. Castle Co., Archt., Alexander Bldg., Abilene.

Tex., Longview—Markham Sanitarium plans annex; 2 stories, 32x50 ft., 32 beds.

Hotels and Apartments

Fla., Miami Beach—Anglers Hotel, Rudolph Townsend, Washington Ave. and 6th St., having plans prepared by Henry J. Moloney, 802 Professional Bldg., Miami, for 3-story, rein. conc., conc. block and stucco addition to hotel; coffee shop and lobby on first floor, hotel room and apartments above.

Fla., Miami Beach—Wm. F. Whitman, 3201 Collins Ave., Miami Beach, and 732 Federal St., Chicago, ready for bids about May 20 at office Roy F. France, Archt., Park Lane Apartments, Miami Beach, for \$180,000, 3-story, 120x160 ft., conc. frame and tile block Indian Creek Apartments, between Thirty-third and Thirty-fourth Sts. and Collins Ave. and Indian Creek Drive; 30 apartments with hotel service and docking facilities in creek and bathing facilities in the ocean; also plans number of cabanas; Spanish type; soundproof walls and floors.

Ga., Atlanta—Mrs. Cella Beerman, 10 Delta Place, N. E., make fire damage repairs to 3-story, brick apartment, 509 Boulevard, N. E.; let contract in few days.

Tex., Bastrop—Mrs. L. C. Bishop, Flaton, purchased Bastrop Inn and plans improvements.

Tex., San Antonio—Manuel W. Phillips, 517 E. Evergreen St., receives bids at office Carl V. Seutter, Archt., 309 Builders Exchange Bldg., for 2-story, rein. conc., tile and stucco, 20-room apartment; tar and gravel roof.

Miscellaneous

D. C., Blue Plains—District Comms., Roland M. Brennan, Ch. Clk., Engr. Dept., District Bldg., Washington, D. C., has low bid at \$13,400 from English Construction Co., 1315 H St., N. W., Washington, for cow barn and stables at Industrial Home for Colored Children; hollow tile, stucco and brick, shingle roof.

Fla., Boca Raton—Spanish River Land Co., C. H. Geist, Pres., Packard Bldg., Philadelphia, Pa., and Boca Raton, has plans by Marion Sims Wyeth, Singer Plaza, Palm Beach, for \$50,000 addition to Boca Raton Club; bids in.

Ga., Atlanta—Sam R. Greenberg & Co., 95 Forrest Ave., N. E., selected Danell & Beutell, 701 Georgia Savings Bank Bldg., for one- and two-story, brick funeral home on Spring St. near 14th St., N. W.

La., New Orleans—Jewish Children's Home, 5342 St. Charles Ave., ready for bids at office Emile Weil, Inc., Archt., Whitney Bank Bldg., for improvements to dormitory.

La., Ruston—Rev. R. W. Vaughan, Supt., Methodist Orphanage, advises that no immediate improvements are contemplated. 5-7

Md., Baltimore—Louis Hasslinger, J. W. Walker, 1707 N. Charles St., remodel 4-story, brick building, 1701-5 N. Charles St., for lunch room; Frederick Thomas, Archt., E. 33rd St.; Herman F. Doeleman, Struc. Engr.; bids in. 3-19

Okla., Tulsa—Tulsa State Fair, John T. Kramer, Sec., receives bids May 24 for coliseum; receiving bids on \$150,000 grandstand and will prob. be opened May 18; Endacott & Goff, Archts., Wright Bldg.; \$500,000 improvement bonds recently voted. 5-7

S. C., Conway—G. B. Jenkins, Fayetteville, N. C., plans rebuilding sales stables noted burned.

S. C., Orangeburg—South Carolina branch of King's Daughters and Sons, Mrs. Frank E. Barron, Pres., Columbia, plans home for aged to be known as King's Daughters Home.

Tex., Dallas—J. T. Downs, S. W. Life Bldg., has permit for \$25,000 brick funeral chapel, 3611 Ross St.

Tex., Dallas—Columbian Club, Arthur Kramer, Pres., 1825 South Boulevard, having plans prepared by Herbert M. Greene, La Roche & Dahl, Construction Bldg., for \$50,000 clubhouse on 20-acre site east of White Rock Lake.

Tex., Longview—Wm. N. Fox and Wm. Maier, Houston, interested in establishment of amusement resort on Gladewater highway near Lake Lomond to be known as Lake Side Inn; \$120,000; plans include dance hall, bowling alley, bathing beach, boating facilities, island playground, summer cottages.

Va., Norfolk—Norfolk Society of Arts, Wm. F. Sloane, Pres., Bd. of Trustees, has low bid at \$124,900 from R. R. Richardson & Co., Natl. Bank of Commerce Bldg., for second unit of Norfolk Museum of Arts and Sciences; 2 stories, 11x127 ft., limestone and brick; Calrow, Browne & Fitz-Gibbon, Royster Bldg., and Peebles & Ferguson, Law Bldg., Archts. 5-7

Schools

Ark., Bradford—Bradford Special School Dist. Bd. of Directors has low bid at \$34,250 from Nelson & Woodson, Russellville, for 2-story, brick and steel school, 14-room and auditorium school; Erhart & Eichenbaum, Archts., 112½ W. Third St., Little Rock. 1-29

Ark., Little Rock—Following contractors estimating on 3-story, 16-classroom building for white children and dormitory and classroom building for negroes at Arkansas School for Deaf, bids May 18 by State Bd. of Public Instruction, C. M. Hirst, Statehouse; General—McGregor & Pickett; Fred Parrott, 2405 Battery St.; Geo. Burden, Natl. Standard Bldg.; Carter Construction Co.; R. L. Dickerson, 4002 W. 11th St.; Hewitt & Russell, J. H. Leveck & Sons, Glover Bldg., all Little Rock; R. T. Higgins, 108 N. Border St., Hot Springs; J. H. Reddick, Kennedy Bldg.; Walter Vernon, Oak St., both Fort Smith; Plumbing—Pettit-Galloway, 114 E. 7th St.; Himsted Plumbing & Heating Co., 208 Louisiana St.; Pfeiffer Plumbing Co., 717 Main St.; Shaw Gas & Plumbing Co., 1401 W. Third St., all Little Rock; C. C. Schrader Plumbing Co., 1016 Central Ave., Hot Springs; Electric wiring—Arkansas Electric Co., 316 Louisiana St.; Electric Construction Co., 8th and Main Sts.; Toll Electric Co., 1210 Booker St.; I. K. Electric Co., 114 Main St.; Brown Long Elec-

tric Co., Prospect Ave. and Spruce St., all Little Rock; Erhart & Eichenbaum, Archts., 112½ W. Third St. 5-7

D. C., Washington—District Commrs., R. L. Brennan, Ch. Clk., Engr. Dept., District Bldg., has low bid at \$50,190 from Bahen & Wright, 916 Rhode Island Ave. N. E., for 4-room addition and alterations to Francis Scott Key School; Albert L. Harris, Municipal Archt. 4-30

D. C., Washington—National Training School for Boys, Bladensburg Road, N. E., receives bids May 29 for cottage building; 3 stories and basement, 80x60 ft., brick and terra cotta, struc. steel floor beams and roof framing, rein. conc. floor, slate roof; all information will be furnished by the superintendent. 4-2

Ga., Rome—Miss Martha Berry, Pres., Berry School, wires regarding report of big building program: "No \$800,000 chapel nor laundry to be constructed this year." 5-7

Ky., Catlettsburg—Boyd County Bd. of Education has low bid at \$15,778 from Adams & Bryan for 8-room, brick school at Summitt for Summitt and Hoods Creek Consolidated Districts.

Ky., Paducah—McCracken County Bd. of Education has low bid from Ray Black for addition to Reidland School and from E. J. Roper & Son for Farley School.

La., Hahnville—St. Charles Parish School Bd., J. B. Martin, Sec., ready for bids in about two weeks for alterations and additions to high schools at Hahnville and Destrehan; 2 stories and basement, brick and tile; consist of science department, additional classrooms, auditorium and gymnasium, stage and equipment, showers and dressings rooms, electric wiring, plumbing and heating; Wm. R. Burk, Archt., Balter Bldg., New Orleans.

La., Houma—Terrebonne Parish School Bd. selected Wm. T. Nolan, Canal Bank Bldg., New Orleans, for school building program to include brick elementary school at Houma and number frame schools; \$145,000. 4-16

La., Kisatchie—Following contractors estimating on repairs and 4-room, brick and stucco addition to high school at Kisatchie, \$20,000, repairs and additions to high at Cypress, \$15,000, principal's cottage at Gorum, bids May 19 by Natchitoches Parish School Bd., Natchitoches: A. G. Simms, Lake Village, Ark.; E. E. Rabalais & Son, Mangham; Tudor & Ratcliff, Commercial Bank Bldg., Alexandria; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg., Monroe. 4-23

Md., Baltimore—Bd. of Public Improvement Comsn., H. J. Leimbach, Supvg. Engr., City Hall, soon ready for bids for \$60,000 2-story, brick, fireproof, 6-classroom and kindergarten dept. school, Morrell Park, Washington Bldg. and Spence St.; John J. Zink, Archt., 2826 Overland Ave.; Kubitz & Koenig, Struc. Engr., Emerson Tower Bldg.; James Posey, Mech. Engr., Baltimore Trust Bldg. 12-25

Md., Baltimore—Bd. of Public Improvement Comsn., H. J. Leimbach, Supvg. Engr., City Hall, has low bid at \$204,659 from J. L. Robinson Construction Co., 522 Park Ave., for West Baltimore Colored Elementary School, Mount St. near Riggs Ave.; electrical, Charles A. Russell; heating and plumbing, Modern Engineering Co.; Buckler & Penhagen, Archts., 525 N. Charles St.; Henry Massart, 328 N. Charles St., and James Posey, Baltimore Trust Bldg., Mech. Engrs. 4-30

Miss., Saucier—Saucier Consolidated School Dist. votes June 3 on \$20,000 bonds for school building.

Mo., Columbia—State Legislature passed bill authorizing \$300,000 for library wing and \$115,000 for purchase of land at University of Missouri.

Mo., Jefferson City—State Legislature passed bill authorizing \$50,000 for building at Lincoln University.

Mo., Kansas City—Bd. of Education, E. C. Meserve, Pres., plans \$1,500,000 building program during 1931 and 1932 to include, in 1931—Wendell Phillips School, addition containing auditorium, gymnasium, cafeteria and prob. 2 classrooms; Ashland, auditorium, gymnasium, fresh air rooms and prob. cafeteria; Greenwood, auditorium, gymnasium, prob. 2 classrooms and cafeteria addition; Paseo and Southwest high schools, completion unfinished auditoriums; \$40,000 for playground improvements; 1932—East High, auditorium, gymnasium, 3 shops, branch library and 12 classrooms; Lincoln High, new building on I. M. Ridge estate site, to cost about \$600,000.

Mo., Kirksville—State Legislature passed bill authorizing \$408,437 for building at State Teachers College.

Mo., Marshall—State Legislature, Jefferson City, passed bill authorizing \$190,000 for power plant at Missouri State School.

Mo., Springfield—State Legislature passed bill authorizing \$35,000 for fireproof vault and interior improvements of administration building, Southwest Teachers College.

Mo., Warrensburg—State Legislature, Jefferson City, passed bill authorizing \$250,000 for building at State Teachers College.

N. C., Morganton—Burke County Bd. of Education erect \$25,000, one-story, brick, 10-classroom and auditorium school in Salem Consolidated School Dist.; Benton & Benton, Archts., Fidelity Bldg., Wilson.

Okla., Poteau—Poteau School Dist. plans issuing \$31,000 bonds.

Okla., Stillwater—State Bd. of Agriculture, Oklahoma City, will sell \$450,000 bonds voted by last legislature for dormitories at Oklahoma A. & M. College; School of Architecture of College was directed to proceed with plans for three campus buildings, including \$22,500 meat laboratory, to be built with legislative appropriations.

Tenn., Fountain City—Knox County Bd. of Education, W. W. Morris, Supt., Knoxville, selected Bauman & Bauman, 815 Market St., Knoxville, to prepare plans for 38-room Central High School; selected R. F. Graff & Sons, Journal Bldg., Knoxville, for \$50,000, 20-room grammar school; plans for improvement for Young's High School, which will include auditorium, domestic science building, library, cafeteria and 4 classrooms, to cost \$30,000, will be drawn by Barber & McMurray, General Bldg., Knoxville; other buildings for which architects will be selected next week include Asbury, Sunny View, Hardon Valley, Beech Grove and Stock Creek; these buildings to be provided for under \$500,000 bond issue approved recently. 4-16

Tenn., Cookeville—Putnam County voted \$80,000 school bonds.

Tenn., Cookeville—City plans voting on \$50,000 school bonds.

Tenn., Erwin—Unicoi County defeated \$55,000 bonds for building rural schools. 4-16

Tex., Beeville—Pawnee School Dist. defeated \$25,000 bonds for school; M. A. Wroten, Supt., Bee County Bd. of Education. 4-23

Tex., George West — George West Ind. School Dist. Trustees receive bids May 25 for one-story, 120x84 ft., brick, tile and reinconc., 6-classroom high school; tile and comp. roof, conc. and oak floors; Hamon & Co., Archts., 501 Medical Professional Bldg., Corpus Christi. 4-30

Tex., Grapevine—Grapevine Ind. School Dist. votes May 16 on \$45,000 bonds for school building.

Tex., Refugio—Refugio Ind. School Dist. voted \$100,000 bonds for school building; 2 stories, brick struc. steel, tile, rein. conc.; ready for bids about May 25; Dielmann & Levy, Archts., State Natl. Bank Bldg., Corpus Christi. 4-23

Tex., Savoy—School Bd. having plans prepared for school building; \$15,000 bonds voted. 4-23

Tex., Warren—Warren Consolidated School

Trustees having plans prepared by Livesay & Wiedemann, San Jacinto Life Bldg., Beaumont, for \$30,000, 10-room and auditorium school; plans vote on bonds.

Va., Gretna—Pittsylvania County School Bd., Chairman, received bids May 15 for school building.

Va., Tazewell—Jefferson Magisterial School Dist. voted \$135,000 bonds, to be supplemented by \$50,000 from Virginia Literary fund, for schools as follows: \$100,000 high school at Tazewell, \$38,000 for North Tazewell building, \$50,000 for school at Bishop and \$5000 each for schools at Poor Valley and Thompson's Valley; address Tazewell County School Bd.; plans by Raymond V. Long, Archt. for State Bd. of Education, Richmond. 4-16

Stores

Ga., Albany—S. H. Kress & Co., care Edw. F. Sibbert, Archt., 114 Fifth Ave., New York, receive bids May 22 for \$100,000, 2-story and basement, 150x44 ft., rein. conc., struc. steel, brick and hollow tile store, N. Washington St.; steam heat, stone trim; following contractors estimating: Norwood Griffin; Ray M. Lee, Box 123, both Atlanta; A. E. Ittner; R. J. Edgerly, both Albany.

Ga., Atlanta—Asa G. Candler, Inc., Candler Bldg., selected Hentz, Adler & Shutze, 1330 Candler Bldg., for 2-story and basement, brick store and office building, Mitchell and Forsyth Sts., S. W.; stone trim, tar and gravel roof.

Ga., Atlanta—S. H. Kress & Co., 114 Fifth Ave., New York, ready for bids about June 15 for \$125,000, 2-story and basement, rein. conc., struc. steel, brick and tile, stone trim store, Peachtree St. near 10th St.; Edw. F. Sibbert, Company Archt.; McDonald & Co., Const. Engrs., Southeastern Trust Bldg., Atlanta. 4-2

Md., Baltimore—Following contractors estimating on addition and alterations to two 2-story, brick store and apartment buildings, 3961-63 Roland Ave., for Wm. H. Davis, 1427 Mt. Royal Ave., and 3955 Roland Ave.; James F. Farley, 1728 E. Federal St.; John Sier, 3705 Chatham Road, both Baltimore; W. H. Sands, Towson. 3-26

N. C., Greensboro—Fred N. Taylor, S. Elm St., has permit for \$10,000, 30x36 ft. addition to building, 108 N. Elm St., occupied by Brownhills, Inc.

S. C., Greenville—J. W. Davis, 715 W. Washington St., soon start work on 40x60 ft. brick store and filling station.

Tex., Longview—George E. Gates erect 3-story, brick store and apartment building, 102 Bank Ave.

Theatres

Va., Roanoke—Suburban Theater Corp., M. J. Peisel, Pres., J. D. Turner, Sec.-Treas., plans \$150,000 theater on Grandin Road, Virginia Heights; Eubank & Caldwell, Archts., Boxley Bldg.

BUILDING CONTRACTS AWARDED

Bank and Office

Tex., Galveston—Following sub-contracts let on \$1,000,000 general office bldg. for Gulf, Colorado & Santa Fe Railway Co.: Sand and gravel, Texas Construction Material Co., Petroleum Bldg.; face brick, Vandaveer, Brown & Stoy, 2202 Polk St.; waterproofing, A. M. Bowles, Post-Dispatch Bldg.; steel forms, Earl E. Jones, 1910 W. Alabama St.; steel sash, Bayer-Voigtlander Co.; tile and terrazzo, International Tile Co., 1420 McKenney St.; glass and glazing, Pittsburgh Plate Glass Co., 101 Crawford St.; granite, Gulf Granite Co., 2614 Washington St.; limestone, Bedford-Carriage Stone Corp., Democratic Bldg.; millwork and movable partitions, Martin-Wilder Co.; screens, Builders Special Products Co., 1701 Oliver St.; struct. steel, Houston Structural Steel Co., 3910 Washington St.; erection of struct. steel and erection of smoke stack, Gulf Coast Erection Co., Petroleum Bldg., all Houston, Tex.; common brick, Cole Brick Co., Ferris, Tex.; hollow tile, Texas Brick Co., Brownwood, Tex., and W. A. Kelso, 2215½ C St., Galveston; Cowing pressure relieving joint, Cowing Pressure Relieving Joint Co., 226 W. Superior St.; terra cotta, Northwestern Terra Cotta Co., 2525 Clyburn Ave., both Chicago, Ill.; Reed clips and Willis metal windows,

R. J. DeWees Co., 3015 Grand St.; cork insulation, Armstrong Cork & Insulation Co., Santa Fe Bldg.; kalamein doors, J. L. O'Hearn Co., 1913 N. Harwood St.; rein. steel, Truscon Steel Co., Constitution Bldg.; misc. and orna. iron, Weaver Ornamental Iron Works, 1807 Carter St.; marble, Vermont Marble Co., 1513 Wall St., all Dallas, Tex.; boiler house steel sash and shower partitions, C. C. Gaines, First Natl. Bank Bldg.; vault doors, Neff-Stiles Co., 400 N. Santa Fe St., both El Paso, Tex.; painting, D. C. Downs, Capps Bldg., Fort Worth, Tex.; dumb-waiters, Active Elevator Co., 212 Chancellor St., Philadelphia, Pa.; oil driving, E. A. Whitney & Son, Inc., 610 City Bank Bldg., Kansas City, Mo.; roofing, George Roofing Co., 2411 C St., Galveston; plans by Engineering Dept., K. B. Duncan, Ch. Engr., Galveston; Robert E. McKee, contr., 1900 Texas St., El Paso. 4-16

Churches

Ark., Springdale—First Methodist Church, Rev. Allen D. Stewart, Pastor, let contract to J. K. Fraser for \$57,000 bldg., Main St.; seat about 400; buff brick, 2 stories and basement, tile roof; John P. Almand, Archt., Boyle Bldg., Little Rock. 8-14

Okl., Frederick—First Baptist Church let contract at about \$45,000 to A. H. Krause, Frederick, for \$100,000 bldg. to replace burned structure; use some material from old structure; brick, stone and conc., 2 stories and basement, 93x122 ft.; Hawk & Parr, Archts., Cotton Exch. Bldg., Oklahoma City. 3-3

City and County

Ala., Wetumpka—Elmore County Bd. of Revenue let contract at \$217,000, including plumbing, heating and elect. wiring, to Algeron Blair, First Natl. Bank Bldg., Montgomery, for court house; Greek type, Indiana limestone, fireproof, 3 stories and basement, 100x128 ft., mastic tile and terrazzo floors, built-up roof, steam heat; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham. 4-9

Mo., St. Louis—Board of Police Commrs. let contract to Woermann Construction Co., 3800 W. Pine St., for \$150,000 police station and attached garage, Kansas St. and Colorado Ave.; conc. and stone, 2 stories and basement; Klipstein & Rathmann, Archts., 316 N. Eighth St.; Taxis & Becker, Conslt. Engrs., Chemical Bldg. 4-30

Dwellings

D. C., Washington—A. Colt Yates, 1620 16th St., excavating for \$43,000 residence, 2424 Massachusetts Ave.; E. C. Ruebsam, Engr., H. B. Smith Bldg.; brick and stone, 3 stories, 39x51 ft., marble and oak floors, caisson foundation, tile roof; Upman & Adams, Archts., Woodward Bldg.; Martin Bros., Contrs., 1341 Connecticut Ave. 4-30

D. C., Washington—Mrs. J. L. Randolph, care Volney O. Chase, Archt., 923 Fifteenth St., N. W., remodel residence; slate roof, elect. refrigeration, incinerator, ice cooling system, vapor vacuum steam heat, 6 tile baths; T. F. Collier, Contr., 1109 20th St., N. W.

D. C., Washington—Douglass Construction Co., 1621 K St., N. W., erect 7 brick dwellings, 5508-20 Second St., N. W.; 2 stories, tin roof, hot water heat; total \$35,000; Geo. T. Santmyers, Archt., 1416 I St., N. W.; owner builds.

D. C., Washington—J. D. Fox, 4503 11th St., N. W., erect 3 brick and hollow tile dwellings, 4539-43 South Dakota Ave., N. E.; 2 stories, slate roof, hot water heat; total \$16,000; plans by Paul F. Fox, 838 Delafield Place, N. W.; owner builds.

D. C., Washington—O. F. Shearer, 1122 Burns St., S. E., erecting \$14,000 residence, 4311 42nd St., S. E.; brick, 3 stories, 32x38 ft., hardwood floors, slate roof; J. G. Herbert, Archt.-Engr.; J. G. Herbert, Inc., Contr., all 2211 Naylor Rd., S. E. See Want Section—Building Material and Equipment. 5-7

D. C., Washington—John Nelson, 1759 U St., N. W., erect 3 brick dwellings, 232-36 V St., N. W.; 2 stories, tin roofs, hot water heat; R. C. Archer, Jr., Archt., 1759 V St., N. W.; total \$12,000; E. Gordon, Contr., 719 11th St., N. W.

D. C., Washington—Chas. M. Wallingford, Denrike Bldg., erect 6 brick dwellings, 1336-40 and 1344-48 Shepherd St., after plans by Geo. T. Santmyers, Archt., 1416 I St., N. W.; 2 stories, tin roofs, hot water heat; total \$40,000; owner builds. 5-7

D. C., Washington—Wm. S. Phillips, Valley Vista Apts., erect 2 brick dwellings, 3416-20 Garrison St.; 2 stories, slate roof, hot water heat; total \$20,000; Louis Justement, Archt., 16 Jackson Place, N. W.; owner builds.

Fla., Miami Beach—Wm. Williams start work in 30 days on \$40,000 residence, 4465 Meridian Ave.; conc. block and conc., 2 stories, tile roof, conc. pile foundation, cast stone, hardwood and tile floors, sprinklers, steel sash and trim, brass and bronze work; Wilbert Harborn, Contr., 2618 N. Greenway Drive, Coral Gables. 5-7

Fla., Miami Beach—Mrs. Nunnally Johnson let contract to Wm. F. Bonsack, 528 Lincoln Rd., Miami Beach, for residence and garage; rein. conc., conc. block and stucco, oak floors, 3 tile baths, steel sash, shingle roof; Robt. L. Weed, Archt., 2620 Biscayne Bldg., Miami. 4-30

Fla., Miami Beach—W. G. Potts, 3920 Lake Shore Drive, Chicago, Ill., erect residence, garages, servants' quarters, etc., 5025 Collins Ave.; Martin L. Hampton, Archt., 925 Lincoln Rd., Miami Beach; John W. Hunt, Contr., 1130 S. W. 13th Ave., Miami.

Fla., Miami Beach—Carl Green, 423 Avenue Navarre, Coral Gables, erect rein. conc., conc. block and stucco dwelling and garage, 55th St. and Pine Tree Drive; 2 stories, 35x66 ft., tile floors, tile roof, steel sash; C. LeRoy Kinports, Archt., 3897 Kumquat Ave., Miami; owner builds.

Fla., Miami Beach—Henry J. Moloney, Archt., 802 Professional Bldg., Miami, drawing sketches for 5 dwellings and garages near Dade Blvd. for corp. being organized; \$18,000 each, rein. conc., conc. block and stucco, 2 stories, 2 tile baths, tile and other floors, tile roof; day labor.

Fla., Miami Beach—Edward G. Schmidheiser, Indian Creek Drive, has permit for \$10,000 addition to residence, 32nd St. and Indian Creek; John C. Gaffney, Inc., Contrs., 708 Collins Ave.; E. L. Robertson, Archt., Calumet Bldg.

Fla., West Palm Beach—James H. Kennedy, Clark Ave., Palm Beach, remodel residence, Ocean Blvd. and Clarke Ave.; \$50,000; Howard Major, Archt., 19 Via Parigi; Smith & Riddle, Inc., Contrs., 210 Royal Palm Way, both Palm Beach.

Fla., West Palm Beach—Arthur Somers Roche, 128 Seaspray Ave., erect Italian type residence, Via Bellaria; 5 baths; Treanor & Fatio, Archts., Phipps Plaza, Palm Beach; J. S. Wilson Co., Inc., Contr., 604 S. Olive St.

Fla., Winter Park—D. E. R. Shippen, 802 Lake Formosa Drive, Orlando, erecting \$10,000 residence; J. C. Gamble Rogers, II, Archt.; Emmett Nicholson, Inc., Contr., both Winter Park. 4-2

Ga., Atlanta—R. C. Houston, care Engineering Dept., Southern Bell Telephone Co., erect \$12,000 brick veneer residence, 1032 Clifton Rd.; 2 stories and basement, hardwood and tile floors; conc. foundation, steam heat; Thos. K. Windham, Inc., Contr., Mtg. Guar. Bldg.

Ga., Atlanta—Geo. P. Murray, 65 Highland Drive, N. E., let contract to Collins, Holdbrook & Collins, Atlanta Trust Bldg., for brick veneer residence; 2 stories and basement, conc. foundation, cast stone trim, tile, terrazzo and hardwood floors; Geo. Harwell Bond, Archt., 1509 Candler Bldg.

Ga., Atlanta—Gilliam & Co., 30 Rogers Ave., S. E., erect brick veneer residence, 1163 Lanier Blvd., N. E.; 1 story, 6 rooms, comp. roof, hot air heat; owners build.

Ga., Atlanta—Roger A. Martin, 830 Myrtle St., N. E., let contract to C. L. Williams, 1423 Oakview Rd., for brick veneer residence; 2 stories and basement, conc. foundation, hardwood and tile floors, asbestos shingle roof, steam heat.

La., Monroe—W. J. Riley, 805 S. Grand St., erect brick veneer residence, Forsythe Ave. and Jasmine St.; 2 stories, 7 rooms, \$10,000; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg.; L. D. Davis, Contr.

La., New Orleans—Ralph J. D. Barry, 1125 Independence St., considers erecting single residence, Metairie Rd. and Fairmont Drive; receiving bids.

La., New Orleans—Mrs. Firmin Reynaud erect \$12,000 raised bungalow, Jefferson Ave. and Cucullu St.; Paul G. Charbonnet, Contr., 830 Union St.

La., Slidell—Dr. J. T. O'Ferrall, 3411 Pyrtania St., erect residence near Slidell; work by sub-contract.

Md., Baltimore—Jos. Peters, 3219 Noble St., has heating and plumbing contract for 34 dwellings, 3401-33, 3400-34 Ramona St., for Frank Novak Realty Co., 33rd St.; elect. work, Crown Electric Co., 164 N. Gay St.; Glenn F. Smithson, Archt., care owner; owner builds. 4-23

Md., Baltimore—Geo. L. Schubert, 2332 Frederick Ave., has plumbing contract for 56 dwellings for James Keely, 3529 Edmondson Ave.; heating, Herr Bros., 1 N. Paca St.; elect. work, Henry C. Klein & Co., 3511 Edmondson Ave.; Fredk. E. Beall, Archt., 334 St. Paul St. 4-30

Md., Baltimore—Frank Novak Realty Co., 33rd St., erect 34 brick dwellings, 3400 block Ramona Ave.; 2 stories; total \$100,000; plans and constr. by owner.

Md., Baltimore—Jas. Keely, Bldr., 2539 Edmondson Ave., erect 26 brick dwellings, 3900 block Gelston Drive; 2 stories; total \$140,000.

Md., Baltimore—J. B. Dunn, 853 N. Howard St., let contract to Frainie Bros., 19 W. Franklin St., for residence, Homeland; Palmer & Lambdin, Archts., 513 N. Charles St. 4-23

Md., Baltimore—Mrs. Robt. Taylor, 11 E. Chase St., let contract to Clarence L. Jarvis, 3604 Woodbine Ave., for residence, Poplar Hills; stone and shingle, 2 stories, 30x55 ft., red oak, tile and linoleum floors, No. 2 Chapman built-up slate roof, stone foundation, incinerator, plaster board, \$14,000; Howard F. Baldwin, Archt., 339 St. Paul Place. 5-7

Md., Baltimore—Dodiha! & Novak, 901 Patterson Park Ave., erect dwelling, probably on Bel Air Rd.

Md., Catonsville, Baltimore—Chas. Haffer, 3123 Wilkens Ave., erect residence, Geo. W. Spence Contr., Old Frederick Rd., Ellicott City.

Md., Chevy Chase, Branch Washington, D. C.—M. & B. S. Warren, 17 E. Taylor St., Chevy Chase, erect 2 brick dwellings, Meadowbrook; 2 stories, slate roof, hardwood floors, tile baths, conc. foundations, hot water heat; Harvey P. Baxter, Archt., 810 18th St.

Md., Garrison—J. C. Potts erect brick and frame residence; 2½ stories; Sears, Roebuck & Co., Archts.-Contrs., 810 N. Charles St., Baltimore.

Mo., Kansas City—Jas. C. Ward, 1120 Ward Parkway, representative, First National-Old Colony Corp., erect residence, Sterling Price Ave.; H. V. Smith & Siemens, Contrs., 63rd and Brookside Sts.

Mo., St. Louis—Walter Harting, 5349 Janet St., erect 4 brick dwellings, 861-65-67-90 Wall St.; 1 story, 24x40 ft. and 23x37 ft., comp. roofs, hot air heat; total \$13,500; owner builds.

Mo., St. Louis—H. B. Strautmann, 4335 Minnesota St., erect 2 brick dwellings, 3826-30 Kingsland Court; 1 story, 25x38 ft., asphalt shingle roofs, hot air heat; total \$10,000; owner builds.

Mo., University City, St. Louis—Alco Supply Co., 808 Chestnut St., erect 3 brick dwellings, 6987, 7732-36 Delmar Blvd.; 2 stories, 41x55 ft. and 32x46 ft., conc. foundations, slate and asphalt shingle roofs, hot water heat; total \$22,500; Nolte & Nauman, Archts., 808 Chestnut; owner builds.

Okl., Bartlesville—C. E. Burlingame let contract to John M. Thurman & Co., Pawhuska, for \$15,000 residence north of Hillcrest Country Club; English type, showers; outdoor swimming pool; Walton Everman, Archt.

S. C., Abbeville—Jordan Ramey erect residence to replace burned structure; Hugh Prince, Contr.; Mrs. Fannie Furman erecting bungalow, N. Main St.; A. M. Lee, Contr.

S. C., Greenville—C. Grantville Wyche, Dean Bldg., let contract to Potter & Shackelford, Inc., Allen Bldg., Greenville, for brick and limestone trim residence; Colonial type, 2 stories and basement, 10 rooms, 5 tile baths, conc. foundation, tile roof, steam heat; S. D. Trowbridge, Archt., 807 Forsyth Bldg., Atlanta Ga. 4-16

Tex., Austin—R. H. Montgomery, 101 E. 31st St., let contract to A. J. Allard, Austin, for fireproof residence, 2808 San Pedro St.; conc., 6 rooms, 2 baths, 2 story; Wilson & Werner, Archts., 739 Milam Bldg., San Antonio.

Tex., Lockhart—Dr. A. A. Ross, Jr., completed foundation for \$12,000 residence, Trinity St.

Tex., Mercedes—Robt. E. Fitzpatrick, Menton Bldg., let contract to P. P. Ewing, Mercedes, for \$10,000 brick veneer residence; 1 story, 10 rooms, tile, oak and pine floors, stained shingle roof; W. H. Benton, Archt., Harlingen; work started. 3-19

W. Va., Montgomery—Dr. O. J. Henderson let contract at \$12,352 to H. P. Green, 1812 Washington St., Charleston, for 4 balloon frame dwellings; 2 stories, 22x26 ft., oak floors, brick foundations, comp. shingle roofs; Montgomery & Pattenon, Archts., Bk. of Commerce Bldg., Charleston. 4-23

Government and State

Ala., Decatur—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$10,400 to Adamson, Boylston & White, 1106 First Ave., North Birmingham, for post office remodeling and enlarging. 4-30

Fla., St. Augustine—U. S. Property and Disbursing Officer let contracts to following for 8 kitchens and mess bldgs., 78 tent floors, repairs to 4 lavatory bldgs., and repairs to 20 mess bldgs., Camp J. Clifford R. Foster: Atlantic & Gulf Construction Co., 621 Edwards Ave.; Hillyer & Reynolds, 235 W. Forsyth St.; W. B. Talley, 111 W. Ashley St., all Jacksonville; frame, conc. floors, 1 story, 20x82 ft., comp., asbestos and asphalt strip shingle roofs. 4-30

La., Baton Rouge—Additional sub-contracts let on \$5,000,000 State Capitol: Rein. conc., Putman Construction Co., 1010 Vermont Ave., Washington, D. C.; cast stone, Edward D. Boyle & Co., 3301 Julia St.; hardware, Woodward Wight & Co.; terrazzo, A. J. Coltry Art Terrazzo Co., 615 Julia St.; Acousti-Celotex, Acousti Specialties Co., granite, Cold Spring Granite Co., Cold Inc., 814 Howard Ave., all New Orleans, La.; Spring, Minn.; stone setting, D. A. Daly, Inc., 5423 Merion Ave., Philadelphia, Pa.; carpentry, Matthews Bros. Manufacturing

Co., Milwaukee, Wis.; hollow metal doors, Dahlstrom Metallic Door Co., Jamestown, N. Y.; orna. iron, Price-Evans Foundry Corp., Anderson Ave., Chattanooga, Tenn.; struct. steel erection, Petroleum Iron Works Co., Petroleum Bldg., Houston, Tex.; tile, General Tiles, Inc., 155 N. DuRoiq St., Baton Rouge, La.; vault doors, Diebold Safe & Lock Co., Canton, O.; Weiss, Dreyfous & Seiferth, Inc., Archts., Maison Blanche Bldg., New Orleans; George A. Fuller Co., Contr., Munsey Bldg., Washington. 4-9

Tex., Randolph Field—Constructing Quartermaster starting work on \$43,000 School of Aviation Medicine after plans by Adams & Adams, Archts., Real Estate Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower, both San Antonio, Tex.; conc., hollow tile and stucco, 144x40 ft., cement floors, cast stone, metal doors, steel sash and trim, hollow tile, interior metal lath, tile roof; S. & W. Construction Co., 983 Shrine Bldg., Memphis, Tenn. 5-7

Hospitals, Sanitariums, Etc.

La., New Orleans—T. A. Pittman Co., Canal Bk. Bldg., has contract at \$72,000 for masonry work for 8 personnel quarters, U. S. Marine Hospital; R. P. Farnsworth & Co., Contrs., Maritime Bldg. 4-16

Hotels and Apartments

Ga., Cartersville—Townsend, Aranoff & Carrot repair third floor of Bartow Hotel, damaged by fire at loss \$15,000; owners prob. build.

Ga., Macon—Following additional sub-contracts awarded on 9-story and basement, 140-room addition to Hotel Dempsey for which Angle-Blackford Co., Am. Bank Bldg., Greensboro, N. C., has general contract: Rein. steel, Truscon Steel Co., Jefferson Bldg.; misc. and orna. iron, J. D. Wilkins, W. Lee St., ext.; millwork, Oettinger Lumber Co., S. Elm St., ext., all Greensboro; cement, Builders Lumber Co., Sixth St.; sand and gravel, T. C. Burke, Inc., 358 Third St.; lumber, McCook Lumber Co., 323 Hawthorne St.; wrecking present structures, Evans & Evans; brick and tile, Standard Brick & Tile Co., 460 Broadway, all Macon; hardware, Russell & Erwin Mfg. Co., 285 Madison Ave.; metal windows, Campbell Metal Window Co., Pershing Square, both New York; terra cotta, Atlanta Terra Cotta Co., Glenn Bldg., Atlanta; folding partitions, J. G. Wilson Co., Southern branch, Norfolk, Va.; testing materials, Froehling & Robertson, Inc., 814 W. Cary St., Richmond, Va.; expect to start erection of frame by June 1; W. L. Stoddart, Archt., 50 E. 41st St., New York. 3-19

Miss., Gulfport—L. Klein and associates started work on \$51,000, 3-story, hollow tile and stucco apartment hotel on East Beach Drive; 17 apartments, tile roof, steam heat, built-in features, Otis elevator; work by day labor under supervision Fred H. Harrison, 1320½ St. Charles Ave., who is ready for sub-bids; Shrouds & Bean, Archts., Gulfport.

Mo., St. Louis—Arnold Contracting Co., 1203 Sunset St., has permit for \$10,000 2-story, 34x45 ft., brick tenement, 2832-34 Dalton St.; comp. roof, hot air heat; owner builds.

Tex., Alice—Hotel Company, care W. A. Sibley, erect \$140,000, 150x140 ft., brick, struc. tile, struc. steel and rein. conc. hotel; Stanley W. Bliss, Archt., Harlingen; day labor; sub-bids only to be received by owner and architect. 5-7

Tex., Victoria—Joseph Durrom started work on \$25,000, 2-story, conc., brick and tile, fireproof, 20-room addition to Delaware Hotel on N. Main St.; Hansen Construction Co., Contr., Victoria and Harlingen.

Miscellaneous

Fla., Miami Beach—Albert Bouche, Two 14th St., let contract to James E. Camassa, 3600 S. W. 17th St., Miami, for addition to Villa Venice Club, 14th St. and Ocean; George Bruce, Archt., 612 Meyer-Kiser Bldg., Miami. 4-16

N. C., Raleigh—Tar Heel Club, Walter Durham, Pres., let contract to W. E. Chapel for rebuilding clubhouse at Milburne on Neuse River, recently damaged by fire; \$15,200; conc. floors, stone framing to roof, fireproof; H. P. S. Keller, Archt., 129 Hillcrest St. 4-16

Tex., Houston—B. C. Lucas, Esperson Bldg., Pres., Memorial Park Investment Co., and others organized Moore Acres Country Club, and erect clubhouse on Kay Road about four miles from Memorial Park; 2 stories, 58x65 ft., 16 rooms; Colonial type;

Harry E. Weaver, of Weaver & Gilbert, Consult. Archt., Esperson Bldg.; W. A. Goggan, V.-P. of Memorial Park Investment Co., will supervise construction.

Railway Stations, Sheds, Etc.

Tex., Fort Worth—North Texas Iron & Steel Co., 1401 N. Adams St., has contract for 225 tons struc. steel for \$170,000 express and baggage depot for Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Texas & Pacific Bldg., Dallas; P. O'B. Montgomery, Gen. Contr., Construction Bldg., Dallas. 5-7

Schools

Ala., University—University of Alabama, Shaler Houser Treas., let contract to D. T. Underwood, Birmingham, for 3-story and basement, 135x36 ft., brick, tile and stucco steel dormitory; gypsum and slate roof; Miller & Martin, Archts., Title Guarantee Bldg., Birmingham.

D. C., Washington—District Commrs., R. L. Brennan, Ch. Clk., Engr. Dept., District Bldg., let contract at \$86,520 to T. T. Taylor Co., Commercial Natl. Bank Bldg., for 4-room addition to Ben W. Murch School; Albert L. Harris, Municipal Archt., Dist. Bldg. 4-23

D. C., Washington—District Commrs., R. L. Brennan, Ch. Clk., Engr. Dept., District Bldg., let contract at \$95,665 to Loudoun-Rust Co., District Natl. Bank Bldg., for Alex. Shepherd School; Albert L. Harris, Municipal Archt. 4-30

D. C., Washington—Following sub-contracts awarded on additions to Powell Jr. High School, for which North-Eastern Construction Co., 6 W. Madison St., Baltimore, has general contract at \$130,250: Rein. steel, struc. steel, Dietrich Brothers, 220 E. Pleasant St.; brick and struc. terra cotta, Bernard & Marling; membrane waterproofing, built-up roofing, Edw. G. Fick & Co.; steel smokestack, Novelty Steam Boiler Works, 2031 Clare St.; metal weatherproofing, Burch Metal Weatherstrip Co., 112 E. Madison St., all Baltimore; stone work, Daniel Hurson, Eighth and Franklin Sts., N. E.; sheet metal work, Daly-Hopper Co., Inc., 1800 11th St., N. W.; misc. metal work, Washington Stair & Ornamental Iron Works, 2014 Fifth St., N. E.; lathing and plastering, Coakley Brothers; interior marble and slate, Standard Art. Marble & Tile Co., 334 C St., N. W.; composition tile, J. M. Adams Floor Co., Inc., 1503 Conn. Ave., N. W.; painting, Samuel Hutcher, 3811 Veazey St., N. W.; glazing, Pittsburgh Plate Glass Co., Fourth and Channing Sts., N. E.; finishing hardware, Rudolph & West Co., 1332 N. Y. Ave., N. W.; plumbing, heating and ventilating, D. C. Engineering Co., Inc., 3710 14th St., N. W.; electrical work, Capital Electrical Co., 1809 14th St., N. W.; millwork, Severn Mil & Lumber Co., all Washington; compound waterproofing, Hydrosol Waterproofing Co., 835 N. Third St., Philadelphia, Pa.; architectural terra cotta, Atlantic Terra Cotta Co., 25 W. 44th St.; Austral hardware, Austral Window Co., 101 Park Ave., both New York; steel cabinets, Excel Metal Cabinet Co., Jamestown, N. Y.; metal toilet enclosures, D. A. Ebinger Sanitary Manufacturing Co., Columbus, Ohio; A. L. Harris, Municipal Archt. 4-16

Fla., Vernon—Washington County School Bd., Chipley, let contract to M. R. Coggin, Chipley, for Vernon High School.

Ky., Louisville—Bd. of Education, Samuel D. Jones, Bus. Dir., let contract at \$215,300 to H. G. Whittenberg, 320 S. Sixth St., for elementary school in Garden Acres Subdivision, Larchmont and Nevada Aves.; heating and ventilating, \$43,878, and plumbing, \$12,948, H. Netherton & Co., 114 N. Fifth St.; electrical equipment, \$6982, Utilities Appliance Co., 662 S. Third St.; J. M. Colley, Archt., 8th and Chestnut Sts. 2-5

La., Baton Rouge—W. J. Edgerly, 3503 Chestnut St., New Orleans, has contract at \$46,129 for electrical work on group of dormitories at Louisiana State University for which J. V. & R. T. Burkes, Inc., N. Boulevard, Baton Rouge, and Am. Bank Bldg., New Orleans, have general contract at \$281,225; Weiss, Dreyfous & Seiferth, Inc., Maison Blanche Bldg., New Orleans, and Wogan & Bernard, Canal Bank Bldg., New Orleans, and Old Raymond Bldg., Baton Rouge, Asso. Archts. 5-7

La., Tioga—Rapides Parish School Bd., Alexandria, let contract at \$50,500 to E. E. Rabalais & Sons, Bunkie, for 2-story, brick and conc. school and frame domestic science cottage; W. Scott Yeager, Archt., Commercial Bank Bldg., Alexandria. 1-15

La., New Orleans—Dominican Fathers Provincial S. S. Rosari of Louisiana have permit for \$160,399 school building, Canal, Olympia St. Patrick and Cleveland Sts.;

O. M. Gwin Construction Co., Contr., 3501 Fern St.

Md., Baltimore—Bd. of Awards, City Hall, let contract at \$662,969 to H. L. Maas & Sons, 1119 N. Ensor St., for 3-story, conc. and brick, 8-classroom Forest Park Junior High School; Smith & May, Archts., Baltimore Trust Bldg.; Kubitz & Koenig, Struc. Engrs., Emerson Tower Bldg.; Henry Adams, Mech. Engr., Calvert Bldg.; plumbing and heating, H. L. Maas; electric work, John F. Heath, 213 N. Calvert St. 5-7

Md., College Park—C. T. Crockett, Bethesda, has contract for heating and plumbing, and Roland Electrical Co., 418 E. Pratt St., Baltimore, has contract for electric work for horticultural building, alterations and addition to engineering building and 3-story, brick dormitory for University of Maryland; Price Construction Co., Maryland Trust Bldg., Gen. Contr., at \$315,000; Smith & May, Archts., Baltimore Trust Bldg.; Huldreich Egli, Mech. Engr., 425 St. Paul Place, all Baltimore. 4-30

Md., Laurel—District Commrs., District Bldg., Washington, D. C., let contract at \$115,900 to A. Lloyd Goode, Inc., 11 E. Fifth St., Charlotte, N. C., for 2-story, brick domestic service building at District Training School; plans by Albert L. Harris, Municipal Archts., District Bldg., Washington. 4-30

Tenn., Columbia—Columbia Military Academy, Col. D. M. Myers, Supt., erect dormitory and officers' quarters; to be known as Maury Hall and will be home of Col. Batts and family and will have rooms for 42 cadets; work under supervision of R. P. Paxton, Mgr. of Richardson Lumber Co.

Tex., Hunt—Hunt Ind. School Dist., J. T. Moore, Pres., School Bd., let contract at \$19,640 to McNeely & Warren, Ingram, for one-story, native stone and rein. conc., 7-room and auditorium school; Adams & Adams, Archts., Western Natl. Bldg., San Antonio. 4-23

Tex., Mercedes—Mercedes Ind. School Dist. Trustees, R. H. Kerns, Pres., let contract at \$45,290 to W. F. Chambers, San Benito, for one-story, 204x50 ft., brick, tile, rein. conc., struc. steel and stucco gymnasium and cafeteria building; tile roof, tile, terrazzo and wood floors; R. Newell Waters, Archt., Weslaco; W. E. Simpson Co., Engr., Milam Bldg., San Antonio. 4-23

Tex., Perryton—Perryton Ind. School Dist. Trustees let contract to W. S. Moss, Lubbock, for \$65,000 for school building; Mann & Co., Archts., Hutchinson, Kans. 2-26

Va., Williamsburg—Max Blitzer, College of William and Mary, let contract to J. T. Nuckols & Son, 1102 Times-Dispatch Bldg., Richmond, for \$22,000, 3-story residence; oak, pine, linoleum and tile floors, slate roof, electric refrigerators; Charles M. Robinson Architects, Times-Dispatch Bldg., Richmond. 5-7

Stores

D. C., Anacostia—Thompson Brothers, 1220 Good Hope Road, S. E., has plans by and let contract to S. G. Herbert, 2211 Naylor Road, S. E., for \$30,000, brick and rein. conc. store building. See Want Section—Building Material and Equipment.

Fla., Miami—Wright & Co., 49 E. Flagler St., have permit for alterations and additions to building; \$25,000; St. John Construction Co., Contr., 629 N. W. Seventh St.; A. H. Buxton, Engr.

Ga., Atlanta—Dr. W. T. Rogers, 4 Ponders Ave., N. W., erect \$10,000, one-story, brick veneer store, 754-56 Marietta St., N. W.; comp. roof; day labor.

Ga., Atlanta—Shelverton Construction Co., Red Rock Bldg., has contract for store, 2287 Peachtree Road, N. W.; one story and basement, brick, stone trim, struc. steel, comp. roof, 3 units.

Ga., Atlanta—Woolford Realty Co., care W. W. Steed, 90 Fairlie St., N. W., let contract to Brazell, Miller & Newbanks, Norris Bldg., for improvements to 8-story Terminal Bldg., Forsyth St. at Viaduct; interior and exterior changes, plumbing, steam heating, wiring, plastering, painting, millwork, stone trim, terra cotta, repair freight and passenger elevators; Morgan, Dillon & Lewis, Archts., Grant Bldg. 3-5

La., Tallulah—J. Abram let contract at \$10,892 to W. T. Simpson, West Monroe, for one-story, 60x70 ft., store and apartment; J. W. Smith & Associates, Archts., Ouachita Bank Bldg., Monroe.

Md., Baltimore—Continental Contracting Co., J. Gwyer, 2508 N. Charles St., let contract to Henry A. Knott, 2107 N. Charles St., for alterations to brick store and apartment, 3103-05 St. Paul St.; Bernard Evander, Archt., 20 E. Lexington St.

Md., Baltimore—People's Service Drug Stores, Inc., 77 P St., N. E., Washington,

D. C. has permit for one-story, brick store, 917 W. 36th St.; 25.1½x75 ft., Carey roof, hot water heat; Sharpe Construction Co., Archt.-Bldr., 1619 E. 29th St. 5-7

N. C., Franklin—Zeb Angel and associates started work on \$25,000, 2-story, brick building; excavation completed; Mr. Angel will supervise construction.

Tenn., Memphis—S. & W. Construction Co., Contr., Shrine Bldg., has permit for \$15,000 improvements to store, 14 N. Second

St., for J. B. Snowden, 1325 Lamar St.; Harker & Cairns, Archts., 123 S. Court St. 1-15

Theatres

Tex., Refugio—Ben Shelton let contract at \$12,120 to P. F. Allan, 708 Olmos Drive, San Antonio, for brick, tile and steel theater and stores; one and two stories, 42x103 ft., conc., tile and wood floors, built-up roof, cast stone, metal ceiling, plaster board; Malcolm G. Simons, Archt., Builders Exchange Bldg., San Antonio. 5-7

Warehouses

D. C., Washington—Rosslyn Steel & Cement Co., Rosslyn, Va., has contract for 170 tons rein. bars for 3-story, 60x250 ft. warehouse and office building, First and N Sts., N. E., for Thomas Somerville Co., 312 Thirteenth St., N. W.; Skinker & Garrett, Gen. Contr., 1719 Eye St., N. W.; J. J. Moebbs, Archt., Dupont Circle and Connecticut Ave. 4-23

THE CLASSIFICATIONS IN THIS SECTION ARE:

WANT SECTION

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Diatomaceous Earth Mining and Refining Machinery.—Hugh W. Hear, P. O. Box 391, Bartow, Fla.—Wants prices and data on machinery for mining and refining diatomaceous earth.

Nailing Machine.—Veneer Mfg. Co., Conway, S. C.—Wants prices and data on used open back nailing machine, with nail spread of 40 to 42 in., good condition; requests name and shop number.

Refrigerating Plant and Water Pump.—Columbus Coca Cola Bottling Co., Columbus Roberts, Pres., 1141-3-5-7 Sixth Ave., Columbus, Ga.—Wants prices and data on small refrigerating plant for farm milk plant at Ben Hill, Ga.; also water pump.

Tank.—E. E. Ward & Son, 3563 11th St., N. W., Washington, D. C.—Wants 7 steel 1000 gal. tanks for gas service station.

Tubing (Brass and Aluminum), etc.—Barkley Machine Works, Gastonia, N. C., wants prices and data from manufacturers of brass and aluminum tubing, 5-in. diam. and larger, gear manufacturers and stamping firms; will purchase in large quantities.

W. M. Smith & Co. (Mchy. Dealer), Box 1709, Birmingham, Ala.—Wants prices and data on following:

- (1) **Boiler**—60 to 100 h. p., portable firebox return tubular, insurance test
- (2) **Tank and Tower**—75,000 to 100,000 gal., for water, used, good condition.

Frank B. Cole, Const. Engr., Box 563, Newnan, Ga.—Wants prices and data on following:

- (1) **Clutch Coupling**—used, for 2 15/16-in. shaft, to transmit 70 h. p. at 400 r. p. m.
- (2) **Engines (Oil)**—2, 60 h. p. and 80 h. p.

Dr. Rafael H. Elizalde, Diechlocho, 136, Santiago, Chile—Wants to represent American manufacturers of road-building materials and machinery in Chile.

Miscellaneous

Call System Equipment.—Electric Automatic Call Systems Co., 200 Main St., Harlan, Ky.—Wants prices and data on equipment for call system.

Locks.—L. McDougald, Hazel Hotel, Newport, Ark.—Wants prices and data from manufacturers on new type of automobile accessory lock in quantities.

Ornamental Fountains.—Town of Salem, R. P. Bishop, City Mgr., Salem, Va.—Wants prices and data on ornamental fountains for parks.

Welding Machine (Electric).—W. M. Smith & Co. (Mchy. Dealer), Box 1709, Birmingham, Ala.—Wants to represent manufacturers of electric welding machines.

Peter Chakiris, Chakiris-Vave Co., 507-9 Pennsylvania Ave., Baltimore, Md., has opened business for contracting and installation of store fixtures, restaurant equipment, etc., and wants prices on following:

- (1) **Lunchroom, Restaurant and Confectionery Fixtures and Equipment**
- (2) **Stoves**
- (3) **Steam Tables**
- (4) **Kitchen Utensils**
- (5) **Stools and Chairs**
- (6) **Silverware**
- (7) **Miscellaneous Hardware.**

National Loan Co., 210 McGill Bldg., 908 G St., N. W., Washington, D. C.—Wants prices from manufacturers on following in quantities:

- (1) **Disinfectants,**
- (2) **Floor Wax.**

Building Material and Equipment

J. G. Herbert, 2211 Naylor Rd., S. E., Washington, D. C., wants prices on following:

- Cast Stone
- Elevators
- Flooring—tile
- Metal Ceilings
- Sprinklers
- Steel Sash and Trim
- Wire Glass.

Bids Asked

Abrasive Wheels.—See Miscellaneous Machinery and Tools.

Air Compressor.—District Comms., Washington, D. C.—Bids May 25 for portable gasoline driven air compressor for Sewer Dept.

Airway Lighting.—Dept. of Commerce, Division of Supplies, W. S. Erwin, Chief, Washington, D. C.—Bids May 25 for installation lighting facilities at certain sites on Jacksonville-Florence section of Jacksonville-Richmond Airway; work consists of installing electric rotating beacons, together with other necessary appurtenances and accessories between Jacksonville and Florence, distance of about 300 miles; 4 of the rotating beacons will be installed at intermediate landing fields together with boundary lighting systems; beacons will be mounted on 75 ft. or other height galv. steel skeleton towers; information on application Commissioner of Lighthouses, Washington, Proposal No. 23200.

Airway Lighting.—W. S. Erwin, Ch., Division of Purchase and Sales, Dept. of Commerce, Washington, D. C.—Bids June 2 for installation of lighting facilities on Albuquerque-Amarillo section of Los Angeles-Amarillo Airway; work consists of installing about 21 electric rotating beacons, electric code beacon and acetylene blinker, together with necessary appurtenances and accessories, including conc. directional arrows, conc. foundations, as well as about 20 10x14 ft. power and service sheds between Albuquerque, New Mexico, and Amarillo, Tex., distance of 280 miles; Proposal No. 23250.

Cafeteria Equipment.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids May 26 for furnishing and installing cafeteria equipment at U. S. post office and courthouse (new), Dallas, Tex.

Clearing Site.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids May 19 for clearing site for new U. S. Interstate Commerce Consn. Bldg., Washington.

Coal (Bituminous).—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn.—Bids June 2 for bituminous coal.

Coal.—Supt. of Lighthouses, Baltimore, Md.—Bids May 25 for 3000 tons bituminous steaming coal, Norfolk Harbor, Va.

Core Drilling.—U. S. Engr. Office, Jacksonville, Fla.—Bids May 25 for core drilling in Lake Okeechobee, Fla.

Chipping and Sealing Hammers.—See Miscellaneous Machinery and Tools.

Coal.—City, I. C. Chandler, Clk., Purchasing Dept., Petersburg, Va.—Bids May 25 for 19 cars standard R. O. M. coal of approx. 50 tons each, New River or Pocahontas, not less than 35% lump, and one car Pennsylvania anthracite stove coal, delivered in city coal bins.

Combination Saw and Tilting Table.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 19 for combination saw and tilting table, delivery Quantico, Va.

Derriek.—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn.—Bids May 21 for derriek.

Dragline Excavator (Lease and Operation).—U. S. Engr. Office, Jacksonville, Fla.—Bids May 21 for lease and operation of dragline excavator in Caloosahatchee-Lake Okeechobee Drainage Areas, Fla.

Draperies, etc.—District Comms., Washington, D. C.—Bids May 21 for draperies and stage equipment for use in public schools.

Drill (Radial).—See Miscellaneous Machinery and Tools.

Drill (Upright).—See Miscellaneous Machinery and Tools.

Electric Light Plant Machinery.—City of Ocala, Fla., J. R. Martin, City Mgr.—Bids July 7 for furnishing and installing machinery in electric light plant.

Elevator.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids June 1 for installing complete elevator plant in U. S. post office, courthouse and custom house.

Elevator.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids June 3 for installing passenger elevator in U. S. post office and courthouse, Rock Hill, S. C.

Field Telephones.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 1 for 300 field telephones, delivery Philadelphia, Pa.

Glass.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 19 for 1140 pieces window glass, 250 pieces wire glass and 50 pieces sheet glass, delivery Quantico, Va.

Heaters and Valves.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 19 for 3 water heaters and 3 valves, delivery Quantico, Va.

Inclinator.—Capt. Geo. E. Lamb, Constructing Quartermaster, Barksdale Field, Shreveport, La.—Bids June 9 for 5-ton natural draft inclinator.

Leather (Russet).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 18 for 2000 sq. ft. russet leather sides, and 1000 sq. ft. russet leather, bag, delivery Philadelphia, Pa.

Lining (Mohair).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 18 for 500 yd. mohair lining, delivery Philadelphia, Pa.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids May 25 for following, Sch. 2652:

Motor-driven electric monorail hoist, 3-ton single-faced steel racks, vertical dividers and horizontal adjustable shelves, steel cases, steel wire, motor driven air compressor, recording ammeters, recording voltmeters, electric oven heating equipment.

Miscellaneous Machinery and Tools.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids May 19 for following: Motor driven, vertical wood boring machine; foot power squaring shears; motor driven upright drill; abrasive wheels; bids May 26 for motor driven precision lathe; pneumatic chipping and scaling hammers; motor driven rod and dowel machine; electrical test benches; motor driven, high-power, vertical milling machine; motor driven universal woodworking machine and motor driven radial drill.

Monument.—Constructing Quartermaster, Ft. McPherson, Atlanta, Ga.—Bids May 23 for constructing monument at Cherokee Indian memorial, New Echota, near Calhoun, Ga.

Miscellaneous Machinery, Tools, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids May 26 for stamping figures and letters; bids June 2 for following: Electric, flat and soldering irons; files; pliers and nippers; rules and tapes.

Oils, Greases, etc.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids May 26 for following, Sch. 2654:

Cup greases, lubricant (gear, chain and wire rope), car and locomotive engine oil, cotton waste and wiping rags.

Pipe (Cast Iron).—See Water Works and Sewers.

Pipe (Terra Cotta).—Bd. of Awards, Baltimore, Md.—Bids May 20 for furnishing and delivering vit. terra cotta sewer pipe to Bureau of Sewers; Milton J. Ruark, Sewerage Engr.

Plumbing Supplies.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 19 for plumbing supplies, delivery Quantico, Va.

Automobile and Patrol.—City Comsn., M. W. Bishop, Sec., Jacksonville, Fla.—Bids May 20 for police patrol and for police automobile, neither to exceed \$1000 in price.

Precision Lathe.—See Miscellaneous Machinery and Tools.

Refrigerator.—U. S. Coast Guard Headquarters, Washington, D. C.—Bids May 18 for refrigerators, approx. 7-ft. food space.

Roads.—State of Maryland—Bids for 4 roads. See Construction News—Roads, Streets and Paving.

Road.—Chattanooga, Tenn. See Construction News—Roads, Streets and Paving.

Road.—Bastrop, La. See Construction News—Roads, Streets and Paving.

Road.—Huntington, W. Va.—See Construction News—Roads, Streets and Paving.

Road.—Virginia. See Construction News—Roads, Streets and Paving.

Roads.—State of Florida—Bids for 5 roads. See Construction News—Roads, Streets and Paving.

Road Materials.—State Road Dept., Robert W. Bentley, Chmn., Tallahassee, Fla.—Bids May 25 for woven wire guard fence, resilient guard plate, treated timber, untreated timber and treated piling.

Rod and Dowel Machine.—See Miscellaneous Machinery and Tools.

Test Benches (Electrical).—See Miscellaneous Machinery and Tools.

Milling Machine.—See Miscellaneous Machinery and Tools.

School Supplies.—Bd. of Awards, Office of City Register, City Hall, Baltimore, Md.—Bids May 20 for furnishing miscellaneous supplies and equipment and other materials for engineers' and various schools.

Screws and Nuts.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids May 26 for machine screws and nuts.

Squaring Shears.—See Miscellaneous Machinery and Tools.

Sea Wall.—Kastenhuber & Anderson, Engrs., Stewart Bldg., Easton, Md.—Bids May 23 for constructing approx. 700 lin. ft. conc. sea wall, ranging from 3 to 6 ft. high, at Halcyon, property of P. A. Rose, Talbot County.

Sea Wall Repairs.—Office of Ch. Clk., Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids May 20 for repairs to sea wall at naval torpedo station, Alexandria, Va.

Sewer Construction.—Bd. of Awards, Baltimore, Md.—Bids May 20 for sewers, Sanitary Contr. No. 270, Materials Contr. No. 83.

Street.—Jacksonville, Fla. See Construction News—Roads, Streets and Paving.

Street.—Bay St. Louis, Miss. See Construction News—Roads, Streets and Paving.

Submarine.—Secretary of the Navy, Washington, D. C.—Bids May 19 for constructing submarine U. S. S. V-9, surface displacement 1100 tons.

Tanks.—Chief of Ordnance, Artillery Div., Munitions Bldg., Washington, D. C.—Bids June 4 for 54 combined wheel and track armored tanks.

Tank.—Office of Ch. Clk., Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids May 20 for 90,000-gal. gasoline tank, at naval operating base, fuel depot, Hampton Roads.

Tiling.—Office of Chief Clk., Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids May 20 for tiling at Naval Academy, Annapolis, Md.

Timber (White Oak).—U. S. Engr. Office, Huntington, W. Va.—Bids May 18 for Northern white oak timber for Lock 5-9 and 10 M. R.

Truck Bodies.—District Comms., Washington, D. C.—Bids May 27 for 4 truck bodies for naval institute.

Unit Heaters.—Commanding Officer, Washington Quartermaster Depot, 20th and C Sts., N. W., Washington, D. C.—Bids May 20 for unit heaters.

Vises.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 2 for vises.

Wharf, Revetment, etc.—U. S. Engr. Office, Galveston, Tex.—Bids June 8 for constructing wharf, revetment and pile clusters along Sabine-Neches Canal and in slip at U. S. Engr. Sub-office, Port Arthur, Tex.

Woodworking Machine.—See Miscellaneous Machinery and Tools.

Wood Boring Machine.—See Miscellaneous Machinery and Tools.

Trade Literature

Turbines Propel Tanker.—The DeLaval Steam Turbine Company, Trenton, N. J., is distributing a leaflet illustrating and describing the tanker "G. Harrison Smith," recently built by the Federal Shipbuilding & Dry Dock Company, Kearny, N. J., for the Standard Shipping Company. This vessel, with her sister ship the "W. S. Farish," is said to have made a new record as an economical carrier of bulk petroleum. Turbines, gears and generating units with which the two ships are equipped were built by the DeLaval Steam Turbine Company.

Electric Hoists.—The Wright Manufacturing Company, Bridgeport, Conn., has issued a catalog devoted to Wright electric hoists, including hook and bolt suspension; plain, geared and motor driven trolleys, and drum and low head types.

INDUSTRIAL NEWS

Cast Iron Pipe Serves 100 Years

Celebrating a century of service, a length of cast iron water pipe, said to be the oldest in the United States, was uncovered recently at Fifth and Federal streets, Philadelphia. The pipe was part of a system installed in 1817. Similar systems have served other American cities for more than 50 years without attention of any kind, according to the Cast Iron Pipe Association, New York.

Pennsylvania Railroad Service for Motorists

Motorists on vacations may now ship their cars to New England and eastern Canada in fast Pennsylvania Railroad freight service, according to an announcement by the railroad. The new service is an extension of that provided for the first time last winter to Florida and other Southern destinations.

Sterling Engines.—The Sterling Engine Company, Buffalo, N. Y., is distributing a booklet outlining the difference between high duty gasoline engines and slow speed industrial engines, and dealing in detail with important features of design and construction of the Sterling engines. The company is also distributing a booklet "The Roll Call," listing municipalities and manufacturing plants provided with emergency protection through Sterling engines; a large proportion of these are in the South.

Pipe Welding.—A booklet on pipe welding for use of plumbers, steamfitters, piping contractors, heating contractors, foremen, supervisors, welding instructors and students, has been compiled by the Gas Products Association, Chicago, Ill., an association of independent manufacturers and distributors of gas welding and cutting supplies.

The Story of Twine.—Under this caption, the International Harvester Company, Chicago, has issued an illustrated booklet, presenting complete details, not only on the production of raw fiber but also on various phases of binder twine manufacture. The company operates several twine mills, one of which is located at New Orleans.

Mahon Steel Fabrication.—An attractive booklet, illustrating and describing important building and other construction projects at various points in the country, on which Mahon structural steel was used and Mahon fabrication and erection engineering facilities employed, has been issued by the R. C. Mahon Company, Detroit, Mich.

Recirculating Water Systems.—Burford, Hall & Smith, Atlanta, Ga., distributors of pumping machinery, power plants and power plant equipment, have issued a bulletin describing in a general way recirculating systems of filtering and sterilizing swimming pool water.

Fire Hydrants.—The Ludlow Valve Manufacturing Co., Troy, N. Y., is distributing a folder illustrating and describing the Ludlow Diamond fire hydrant, an improved "self-illuminating" unit.

\$250,000 Order for Westinghouse

An order involving more than \$250,000 has been placed by the Safe Harbor Water Power Corporation with the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., covering 32 type "O-44" and 4 type "Go-3" oil circuit breakers, equipped with "De-ion" arc interrupting devices. These are to be installed at Safe Harbor, Pa., about 75 miles northwest of Baltimore, for protection of electrical equipment valued at more than \$5,000,000. The breakers will be built at East Pittsburgh, where it is estimated that 200 men will work on the order.

Waterless Gas Holder

Contract for fabrication and erection of a 6,000,000 cubic foot Stacey-Klonne waterless or piston gas holder has been awarded by the Syracuse Lighting Company, Syracuse, N. Y., to the Stacey Bros. Gas Construction Company, Cincinnati, Ohio, holder division of the Stacey Engineering Company. The holder is cylindrical in form, with a cone roof surmounted by a turret, the interior being provided with a moveable piston beneath which the gas is stored. While approximately 30 Klonne holders have been installed in various foreign countries, it is pointed out that the Syracuse installation should be of particular interest to the American gas industry, because of a great saving in foundation cost, attractive appearance, constant pressure and low maintenance and operating costs.

Adds Radiator Valves to Line

Jas. P. Marsh & Company, Chicago, manufacturers of steam specialties, heating systems and industrial instruments, have acquired the radiator valve division of the General Brass Company, Detroit, according to A. D. Rose, general sales manager of the Marsh company, thus adding standard radiator valves to their present line of automatic air and packless valves, gauges and thermometers. The Marsh company is a division of the Commercial Instrument Corporation, Chicago.

Woodworking Plant

A new woodworking industry, with George Latham as general manager, has been established at Elkins, W. Va., for manufacture of various kinds of woodwork, including doors, sash, interior trim, etc. The plant, electrically driven, will also make reproductions of antique furniture from black walnut, cherry, curly maple, quarter-sawn oak, poplar and ash, and from mahogany when desired.

Newport News Shipyards Lead

Active leadership among all the shipyards in the United States is credited to the Newport News Shipbuilding & Dry Dock Company, Newport News, Va., in the latest bi-monthly report of the American Bureau of Shipping. A new record for the period, since the wartime spurt, also is announced for American shipyards.

As of May 1, American yards were building 184 hulls, aggregating 438,346 tons, or 39 vessels and 9598 tons more than the figures two months earlier.

At the Newport News yards, on the same date, eight ocean-going vessels were in course of construction, the largest being the President Hoover and the President Coolidge, of 21,000 tons each, for the Dollar Line. These have since been launched and are receiving final equipment and decoration. Other ships under way at these yards are the Talamanca, Segovia and Chiriqui, each of 7000 tons, for the United Fruit Company; two ships of 5800 tons each, for

Westinghouse Officials Elected

At an organization meeting of the board of directors of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., the following officials were elected. A. W. Robertson, chairman of the board; F. A. Merrick, president; J. S. Tritle, vice-president in charge of manufacturing; S. M. Kintner, vice-president in charge of engineering; W. S. Rugg, vice-president in charge of sales; L. A. Osborne, H. P. Davis, H. D. Shute, J. S. Bennett, H. T. Herr, Walter Cary, T. P. Gaylord and Harold Smith, vice-presidents. C. H. Terry was elected an honorary vice-president and E. M. Herr was re-elected vice-chairman.

Largest Searchlight Again Used

What is said to be the largest searchlight in the world—a General Electric arc light mounted atop the city hall in University City, Mo.—has again been put in service. This light, equipped with an 80-inch projector, produces 250,000,000 candlepower, and on clear nights is said to be visible at a distance of 175 miles.

New Truscon Steel Official

The Truscon Steel Company, Youngstown, Ohio, announces appointment of Garrett A. Connors as vice-president, director of purchases. In his new position Mr. Connors will have complete charge of purchases for all Truscon plants, maintaining his headquarters in Youngstown.

Secures Larger Quarters

For the fourth time in five years the Masonite Corporation, manufacturers of insulation and wall board, has had to secure additional space for its general offices. The new office is now on the twentieth floor of the Conway Building, 111 Washington street, Chicago.

\$1,250,000 Bond Election

St. Joseph, Mo.—An election has been called by the St. Joseph School Board for May 23 on a bond issue of \$1,250,000 for schools. This sum, it is thought, would insure adequate equipment and improvement of grounds and facilities of 25 schools and provide for a new school in South Park, opportunity school for mentally sub-normal children, site and initial unit for an elementary school in the Ashland avenue vicinity, and the completion and equipment of schools now under construction.

PICK-UP AND DELIVERY SERVICE BY RAILROADS**Companies in Various Parts of the Country****May Inaugurate Store-Door Service**

Twelve southwestern railways are giving consideration to pick-up and delivery service, commonly called store-door service. They are: Missouri Pacific, the Texas & Pacific, St. Louis-San Francisco, the St. Louis-Southwestern, the Missouri-Kansas-Texas, the Southern Pacific, the Western Pacific, the Chicago, Rock Island & Pacific, the Atchison, Topeka & Santa Fe, the Kansas City Southern, the Louisiana & Arkansas, and the Burlington-Rock Island roads.

All are acting together in the matter. A committee handling the subject is conducting an extensive investigation, and it is expected that definite conclusions will be reached shortly. The plan contemplates pick-up and delivery service at the regular tariff rates for distances up to 300 miles. Beyond 300 miles it is proposed to apply the tariff rates plus ten cents per 100 pounds where pick-up and delivery service is required. By this method the railroads hope to regain some of the short-haul freight they have lost to the trucks. But they propose to employ the privately owned trucks available at points where service will be rendered. Shippers will be required when making shipments to state whether or not pick-up and delivery service is desired. Where shippers elect to deliver their shipments direct to carrier's depot it is proposed to make an allowance of five cents per 100 pounds for this service.

The Boston & Maine Railroad also has in contemplation an expansion of its motor truck service to eventually include pick-up delivery service. The Chicago, Milwaukee, St. Paul & Pacific, and the Chicago & North Western railroads plan to inaugurate such service.

Because privately owned trucks are performing such service and thereby securing a major share of the local business, there is a growing impression that the railroads cannot wait any longer to institute such a service. In recent discussions the suggestion has been made that instead of attempting to hamper motor-freight truck operations through imposition of new regulations and increased taxes, the railroads would do well to buy truck fleets and get a share of the business for themselves by picking up freight at the source and delivering it the same as the independent motor truck operators are doing. It is pointed out that the railroads might thus be able to get back much of the business they have lost because of their ability to guarantee reliable service.

Packaging Frozen Foods

In a recent address on "The Influence of Package Design on Retail Merchandising," J. D. Malcolmson, manager of the research engineering department of the Robert Gair Company, paper and fibre container manufacturers of New York, recounted the rapid development of the quick freezing industry and stated that paperboard packages are now being used for more than 50 quick frozen products. These include fresh fish, oysters, shrimp, meats, fruits, berries and vegetables. Mr. Malcolmson says it is easy to print these packages in attractive colors and that more recently they are being lined with grease-proof and moisture-proof coatings, together with transparent windows or wrappers. It is pointed out that in introducing such a revolutionary product, it is essential that the contents be either visible or readily accessible for visual inspection.

A similar statement was made a few weeks ago by G. C. Corbaley, president of the American Institute of Food Distribution, when he said:

"Our organization is distributing about 20,000,000 pounds of frozen fruits all over the United States, and in Europe to a certain extent. We are just at the beginning of an awakening of real knowledge of what is going to be done to our food supply by cold. Heretofore, we have treated heat as the normal food preservative. The American home, within the next 10 or 15 years will be a relatively small establishment, where the woman will no longer do any important measure of preparation; 90 per cent of her food will come to her packaged under factory methods, ready for a small touch of individuality and preparation for the table."

In 1929, about 22,000,000 pounds of fish were quick frozen, and production of packaged fish during 1928 showed an increase of 350 per cent over 1927.

Clarence Birdseye, inventor of quick freezing, made the following statement before a recent meeting of the New York Food Marketing Council:

"The only entirely safe way to distribute packaged perishable foods is to make sure they remain hard-frozen until they reach the consumer. Such foods contain within themselves a large amount of refrigeration, and if placed in well-insulated shipping containers may be transported for long distances even by ordinary express or parcel post. For this purpose, corrugated fibreboard containers, with the proper number of pads and liners, are admirable. Corrugated fibreboard has about the same insulating value as good sheet cork; it is light, strong and inexpensive. Such a container, having an aggregate wall about an inch thick and holding 50 one-pint cartons, costs less than 25 cents including two color printing and all labor in connection with setting up and closing. It will stand shipment by express; and if solidly full will, even in the hottest weather, keep its contents frozen for at least three

days—and perfectly fresh, although partially thawed, for twice that long."

Mr. Malcolmson, in his address, ventured the prophecy that past developments in folding boxes and in display cartons will be as nothing compared with developments of the future. In addition to frozen foods, he said that soon we will be seeing watertight folding boxes from which all air has been withdrawn, being replaced with some inert gas such as nitrogen or carbon dioxide. These and other developments will inevitably lead to striking changes and improvements in both merchandising methods and package design.

\$3,600,000 Menhaden Industry

Cooperative effort, elimination of waste by scientific research and closer scrutiny of production costs form the basis of suggestions offered for rehabilitation of the \$3,600,000 menhaden fish-scrap industry, according to Henry O'Malley, commissioner of the Commerce Department's bureau of fisheries. A recent report, "The Menhaden Industry," gives a description of the development and operation of the industry, and discusses methods of improvement as indicated by the bureau's study. Suggestions of probable interest to Southern producers include:

More efficient operation of pressing equipment, recovery of suspended and dissolved flesh solids lost in discarded press liquors, more efficient oil recovery, better storage facilities for menhaden oil, reduction of losses in drying fish scrap, improvement of quality of the product by drying at lower temperatures and improved methods of marketing the manufactured products.

The study points out the possibility of reducing the cost of factory operation, the possibility of increasing the efficiency of fishing methods and the value of co-operation in the solution of problems of mutual interest.

During the 1929 season 37 menhaden factories were in operation along the Atlantic seaboard, the report states. These factories utilized 396,217,800 pounds of fish and manufactured useful products in the form of scrap, meal and oil valued at \$3,630,054. It is estimated that the industry gave employment to 4000 to 4500 men and paid in salaries and wages an amount approximating \$2,500,000.

\$2,000,000 Refunding Bonds

Nashville, Tenn.—Bids will be opened May 18 by the State Funding Board for the purchase of \$2,000,000 refunding bonds, to take up short term highway notes maturing June 1 of this year.

Sound Suggestions to the South

In the spring number of the Agricultural Bulletin, issued by the Atlanta and West Point Railroad Company, the Western Railway of Alabama, and the Georgia Railroad, an editorial foreword offers some advice which should be of value to the farmer and of interest to Southern business men.

Referring to the fact that the main crop of the territory served by these lines is cotton, it is pointed out that:

"The risk of putting all our chances on a big cotton crop would likely be just as great a mistake as to eliminate it altogether from the farm program. Certainly there is a middle ground that each individual can work out best suited to his conditions. The crop must be grown economically if a profit is to be had under existing prices.

"In a recent report of the Georgia State College of Agriculture based on 28 experiments on varied soil types of the state, the following results were obtained: Where no fertilizers were applied, the yield was 382 pounds of seed cotton per acre. The application of 400 pounds of 10-6-4 fertilizer gave a yield of 909 pounds seed cotton per acre, an increase of over a pound of seed cotton per pound of fertilizer. Under these representative conditions the application of fertilizer, valued at \$6.14, increased the yield 477 pounds. Even at the low prices prevailing at the present time, it can easily be seen that the expenditure was highly justified.

"Much progress has been made within the past few years in establishing year round markets for hogs, beef cattle, poultry, eggs, and dairy products. Southern cities are still importing these products. A reasonable expansion of hogs and beef cattle seems possible due to the selling out of the breeding stock in the drought-affected sections of the Middle West. Home needs of other live stock products can be met. Any increase in animal production that is profitable must be based on increased production of feeds on the farm.

"Here and there in every county individual farmers are found that have already solved these problems; their farms are on a balanced basis, their barns are full of hay, and they have an abundance of corn and other grains for their animals. Their advice is the best that can be obtained. Answers to many questions confronting farmers can probably be found on a neighboring farm. They can be assured that whatever their neighbor has found to be practical is suited to the locality.

"An adequate home garden on every farm will guarantee an abundance of health-giving vegetables the year round. This will lower the cost of living and increase the health of the family."

Foreign Trade Convention

A program designed to promote courage by a presentation of facts is announced by the National Foreign Trade Council for the annual convention, to be held this year in New York, May 27, 28 and 29. James A. Farrell, president of the United States Steel Corporation, is chairman of the Council, and O. K. Davis secretary, 1 Hanover Square, New York City.

Planned for the first day are an address by Mr. Farrell and group sessions to discuss the topics: "Where Shall We Export and How?" "Winning Markets by Jumping Hurdles"; "Cashing in on Export Profit Opportunities," and "Imports." Relations and trade with Latin-America will be the subject for the second day, with group topics also on "Cooperation in Export Trade" and "Credits and Credit Information." "Foreign Trade Banking," "Trade with Europe" and "The Business of the Sea" will be leading topics on the final day.

As customary, the Council will provide a trade advisor service, composed of more than 60 experts in various lines, including C. M. Peters of Black & Decker Manufacturing Company, Towson, Md.; Sanborn H. Smith, Gulf States Steel Company, Birmingham, Ala., and E. K. Taylor, Crown Cork & Seal Company, Baltimore. This staff will be reinforced by officials from the Federal State Department, Department of Commerce and other Government agencies.

Three hundred bankers, industrialists, merchants and leaders in world trade, under the chairmanship of Thomas W. Lamont, have been appointed by New York as a general reception committee, to assure the comfort, convenience and entertainment of the delegates and their families.

\$2,643,000 for State Buildings

Jefferson City, Mo.—An appropriations bill recently passed by the Missouri Legislature authorizes one of the largest programs for enlarging state institutions ever undertaken. The measure provides for the expenditure of more than \$2,643,000 and includes the following items: Light, heat and power plant for state hospital No. 1 at Fulton, \$292,000; fireproofing state hospitals at Fulton, St. Joseph and Nevada, \$50,000 each; hospital building at Farmington, \$100,000; power plant at Missouri State School, Marshall, \$190,000; hospital at Federal Soldiers Home, St. Charles, \$60,000; purchase land for University of Missouri, \$115,000; library wing, \$300,000; Kirksville Teachers College, \$408,437; Booneville Reformatory, \$65,000; Warrensburg State Teachers College, \$250,-

000; industrial building at Lincoln University, Jefferson City, \$50,000; purchase of prison property, Jefferson City, \$40,000; purchase of land at St. Joseph Hospital, \$3000; psychopathic hospital at Kansas City, \$150,000; new hospital at Mount Vernon tubercular sanatorium, \$100,000; new building at Rolla School of Mines, \$250,000; improvements at Southwest Teachers College, Springfield, Mo., \$35,000; home at St. James, \$60,000, and administration building for the Missouri poultry experiment station at Mountain Grove, \$25,000.

Loss in British Cotton Growing

A loss for the year of £20,521 is disclosed in the annual report of the British Cotton Growing Association. The figures are arrived at after making provision for depreciation and reserving a further £1466 against bad and doubtful debts, and £7441 against investments. The report states that the result is largely due to the persistent fall in cotton values during the time the crops were being marketed.

The quantity of cotton, 89,350 bales, which passed through the hands of the Association in 1930 showed a large decrease compared with former years.

77 Miles Double Track Completed

Lexington, Ky.—The Southern Railway System has completed double tracking and revising 77 miles of the Cincinnati-Chattanooga line, a major construction project which has been under way since September, 1928. This section carries the double track from Williamstown, Ky., to Danville and provides continuous double track from Cincinnati to South Fork, Ky., 136 miles. Some heavy construction was required, involving the removal of 4,000,000 cubic yards of material, 75 per cent of which was solid rock. The Southern now has 246 miles of double track on the 338-mile line between Cincinnati and Chattanooga.

\$500,000 Pharmaceutical Building

Working drawings for a \$500,000 headquarters building to be erected in Washington for the American Pharmaceutical Association, of which Dr. E. F. Kelly, Baltimore, is secretary, have been completed and application has been made for a building permit. The date of opening bids on the building is still indefinite. John Russell Pope, New York, is architect and Dr. H. A. B. Dunning, Baltimore, is chairman of the plans committee.

Regional Heads to Aid Texas Development

Austin, Tex.—Charles R. Tips, Three Rivers, Tex., general campaign chairman of Progressive Texans, Inc., an organization recently formed here by leading interests of the state to carry out a program of state promotion and advertising for the purpose of developing new markets for Texas products and to promote a more intensive industrial development, has named three business men representing West, South and East Texas as general chairmen to carry on the campaign in their respective areas. E. B. Neiswanger, San Antonio, one of the directors of the organization and president of the Central Power and Light Company, will serve as general chairman for South Texas; C. R. Ulrickson, vice-president of Trinity Portland Cement Company, Dallas, will act as chairman for West Texas, and Harry R. Olmstead, Dallas, for East Texas. John W. Carpenter, also of Dallas, is president of Progressive Texans, Inc.

Program for Realtors

Two demonstration appraisals have been added to the program of the annual convention of the National Association of Real Estate Boards to be held at the Lord Baltimore Hotel, Baltimore, May 27 to May 30, according to Peyton B. Strobel, president of the Board. One of these will be on a commercial and the other on a residential property, the latter being given by A. P. Allingham, of Parke, Hall & Co., Buffalo, N. Y., on the afternoon of May 28. A speaker for the commercial demonstration will be announced later. An elaborate entertainment program is being arranged, according to Robert H. Wildman, chairman of the entertainment committee. On May 26, the day preceding the opening of the convention, a lawn fete will be given on the estate of Harry E. Gilbert, former president of the Board and general chairman of the convention. A ball at the Southern Hotel will feature the evening of May 27 and a "Home Town" speaking contest will be held on the evening of May 28. A sight-seeing trip by buses on May 29 will be followed by a boat trip down the harbor. A golf tournament will also be held that day.

New Paper Mill Operating

Panama City, Fla.—Shipments of paper are being made regularly from the huge mill of the Southern Kraft Corporation, an International Paper Corporation subsidiary, which recently began operation. About 600 persons are now on the payroll.

LEADITE

PRICE PER POUND versus PER MILE COST OF CONSTRUCTION

You know that the main saving in making joints in bell and spigot water pipe is in making them with a material which requires caulking, and a material which does not require caulking.

But,—the saving between two self-caulking jointing materials is very slight, even with several cents per pound difference in price, when spread over the per foot, or per mile, cost of construction, of the pipe line.

From a "sales point," the difference in price per pound between two self-caulking jointing materials may at first sound attractive to the prospective purchaser, but the actual difference in cost on a mile of pipe does *not* appear so convincing when you consider the entire investment of the pipe line installed,—especially, when you are putting the pipe under ground as a "permanent installation."

The difference in price per pound between LEADITE (which is the pioneer self-caulking jointing material for bell and spigot water mains) and other self-caulking jointing materials, would probably not even affect the proposal price on a pipe line job. The Principals would probably have to pay the same price for the installation, whether it were laid with LEADITE, or with a lower priced self-caulking material.

The extensive use and long excellent performance record, of a product, (such as LEADITE) are features which most water works men consider in selecting any material to be used by them on such important work as a water pipe line.

Buried to be forgotten, as water mains usually are, it takes a long time to convince or persuade

water works men to allow their field work to be used as an "experimental laboratory" for any product that may come along, even though represented to be "JUST AS GOOD."

Water works men *know*, that they can buy almost anything represented to be "JUST AS GOOD,"—and usually at a lower price. They also *know*, that *quality counts*, and are usually willing to pay for it.

On one mile of six (6") inch pipe, 440 joints, (12 foot lengths), the approximate difference in cost of one self-caulking jointing material over another would be as follows:

	Per Mile
1c. per lb. lower price would amount to	\$ 13.20
2c. per lb. lower price would amount to	26.40
3c. per lb. lower price would amount to	39.60
4c. per lb. lower price would amount to	52.80
5c. per lb. lower price would amount to	66.00
6c. per lb. lower price would amount to	79.20
7c. per lb. lower price would amount to	92.40
8c. per lb. lower price would amount to	105.60

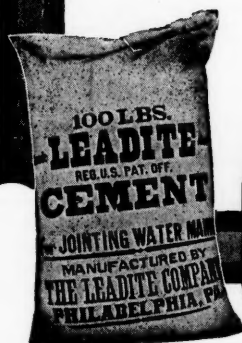
The foregoing might not be thought of when discussing price per pound, but it will be seen from the above figures, that the difference is slight. *Probably less than 1% of the entire investment in the line.*

Water works men are known for the care they exercise in selecting materials,—and it seems that they still prefer to use long tried and tested materials, rather than some "cheaper" products which might not have the same long performance record back of them.

LEADITE is the most widely known, the most frequently discussed, the most often specified and the most extensively used self-caulking jointing material for bell and spigot water mains.

*The Pioneer self-caulking material for c. i. pipe.
Tested and used for over 30 years.
Saves at least 75%*

THE LEADITE COMPANY
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No Caulking



FINANCIAL NEWS

Bond Issues Proposed

Ala., Auburn—City, Bert Newton, City Clk., opens bids May 18 for \$21,000, \$500 and \$1000 denom., 8% general obligation street improvement bonds.

Fla., Bartow—Griffin School Dist. No. 24 of Polk County, Sec. of School Bd., opens bids June 3 for \$12,500 bonds.

Ky., Owensboro—City, C. A. Rogers, City Clk., plans voting in November on \$250,000 natural gas distribution bonds.

La., Baton Rouge—State Highway Comsn., O. K. Allen, Chmn., sell \$15,000,000 bonds about June 15. 11-13-30

La., Lafayette—Lafayette Parish School Bd., J. W. Faulk, Supt., will offer Milton school bonds at not less than par and accrued interest.

La., Slidell—City, H. F. Fritchie, Mayor, did not sell \$40,000, 6% sewerage bonds of Sewerage Dist. No. 1; will readvertise at later date. 3-26

Md., Baltimore—City, A. Walter Kraus, City Solicitor, voted \$7,500,000 waterworks bonds. 4-23

Md., Centerville—Town, C. Percy Tucker, Clk., opens bids May 22 for \$70,000 5% electric light bonds. 4-23

Md., Frederick—Frederick County, R. Bruce Murdock, County Clk., opens bids May 23 for \$510,000, \$1000, 4% bonds; \$186,000, refunding; \$100,000 serial bonds of 1931; \$100,000, road bonds of 1931; \$124,000, school bonds of 1931. 4-23

Md., Denton—Caroline County, Walter S. Rutter, County Clk., opens bids May 19 for \$75,000, 4½%, \$1000 denom. refunding bonds. 4-23

Md., Myersville—City votes June 15 on \$40,000 water works bonds. 4-23

Md., Rockville—Montgomery County Comms. call for bids at once for \$448,000 refunding bonds.

Md., Salisbury—Wicomico County, Rachel W. Morris, Clk., County Comms., opens bids June 2 for \$200,000 bonds; \$90,000, scrip retiring bonds of 1931; \$110,000, school bonds of 1931. 4-23

Miss., Clarksdale—Bolivar County Supvrs. soon call election on \$150,000 or more road bonds.

Miss., Gulfport—Saucier Consolidated School Dist. votes June 3 on \$20,000 school building bonds.

N. C., Bryson City—Local Government Comsn., Chas. M. Johnson, Sec., Raleigh, opens bids May 19 for \$32,000, 6%, \$1000 denom. Town of Bryson City gold bonds.

N. C., Bryson City—Local Government Comsn., Chas. M. Johnson, Sec., Raleigh, opens bids May 19 for \$65,000, 6%, \$1000 denom. Swain County gold bonds.

N. C., Littleton—City, E. C. Bobbitt, Clk., reoffer \$10,000 funding bonds. 2-12

N. C., Waynesville—Local Government Comsn., Chas. M. Johnson, Sec., Raleigh, opens bids May 19 for \$230,000, not exceeding 6%, \$1000 denom. Haywood County courthouse and jail bonds.

Okla., Arnett—Ellis County votes May 26 on \$100,000 road bonds. 4-30

Okla., Oklahoma City—State Bd. of Agriculture call for bids immediately for \$450,000 bonds for dormitories at Oklahoma A. & M. College.

Okla., Oklahoma City—State School Land Dept., Frank C. Carter, State Aud., probably sell school bonds in near future.

Okla., Poteau—Poteau School Dist. plans issuing \$31,000 bonds.

Okla., Pryor—City recently voted \$35,000 park bonds.

Okla., Wewoka—City, J. E. Howard, City Mgr., advises not planning issuing bonds. 4-16

Tenn., Cookeville—Putnam County voted \$80,000 school bonds. 4-23

Tenn., Cookeville—City plans voting on \$50,000 school bonds.

Tenn., Erwin—Unicoi County defeated \$55,000 bonds. 4-16

Tenn., Maynardville—Union County, A. L. Evans, Judge, received no bids for \$80,000, not to exceed 6% bonds. 4-2

Tenn., Memphis—City votes July 7 on \$1,250,000 bonds; \$400,000, sewers and drainage; \$850,000, improvement. 4-9

Tenn., Nashville—State Funding Bd. opens bids May 18 on \$2,000,000 refunding bonds.

Tex., Beaumont—Jefferson County, B. B. Johnson, County Judge, plans voting bonds for sub-courthouse at Port Arthur.

Tex., Beaumont—City Comsn. Council opens bids May 19 for street paving to cost approx. \$75,000.

Tex., Beeville—Pawnee School Dist., M. A. Wroten, County School Supt., defeated \$25,000 bonds. 4-30

Tex., Corpus Christi—City plans issuing bonds for reconstructing waterworks dam.

Tex., Dallas—City, J. Waddy Tate, Mayor, probably sell \$300,000 airport bonds in May. 4-16

Tex., Dumas—City, N. McDade, Mayor, voted \$70,000 sewerage system bonds.

Tex., Edna—Jackson County voted \$120,000 Road Dist. No. 4 bonds. 4-2

Tex., Galveston—Galveston Independent School Dist. plans reoffering \$800,000 school bonds for which bids were rejected in February. 2-5

Tex., George West—City, J. A. Mote, Sec. School Bd., opens bids May 20 for 5% school bonds. 4-30

Tex., Leakey—Real County votes May 20 on \$85,000 road bonds.

Tex., Refugio—Refugio Independent School Dist. recently voted \$100,000 school building bonds. 3-19

Tex., Robert Lee—Coke County may call election on road bonds in Precinct 1.

Tex., San Marcos—San Marcos Independent School Dist. sell \$200,000 school bonds in May. 4-16

Tex., Savoy—City voted \$15,000 school building bonds. 4-23

Tex., Sherman—Grayson County may call election on courthouse bonds.

Tex., Silsbee—Silsbee Independent School Dist., A. D. Rawlinson, Supt., Bd. of Education, offer \$60,000 bonds for sale at once. 4-23

Tex., Vega—City soon offer for sale \$40,000 waterworks bonds. 4-23

Tex., Wellington—City postponed election on \$80,000 gas plant bond election until June 23.

Tex., Warren—City plans voting \$30,000 school bonds.

Va., Danville—City votes June 5 on \$150,000 auditorium-armory bonds. 11-27-30

Va., Tazewell—Tazewell County, A. C. Buchanan, County Judge, voted \$135,000 Jeffersonville Dist. school bonds. 4-16

Bond Issues Sold

Ala., Mobile—Mobile County Comsn. sold \$169,000 refunding bonds to First Securities Co., at \$171,250 and accrued interest.

Ala., Gadsden—Etowah County Bd. of Revenue sold \$200,000, 5% bonds for retiring like amount of floating indebtedness to Taylor, Wilson & Co., Walter Woody & Helmerdinger, and Wiel & Turney, all Cincinnati, Ohio, at 99.25. 4-31

D. C., Washington—Washington Suburban Sanitary Comsn., T. Howard Duckett, Chmn., 804 Tower Bldg., 14th and K St., N. W., sold \$500,000, 4½% bonds guaranteed by Montgomery and Prince George's Counties, Md., to syndicate composed of Union Trust Co. of Maryland, Equitable Trust Co., W. W. Lanahan & Co., Colston, Heald & Middendorf and C. T. Williams & Co., all Baltimore, Md., at 105.131.

Md., Frederick—City, Edward J. Smith, City Atty., sold \$235,000, 4½% bonds to Strother, Brogden Co., Baker, Watts & Co., Maryland Trust Co. and Mackubin, Goodrich Co., all Baltimore; \$200,000 water works, at \$106.926; \$35,000, airport, at 105.7826.

Miss., Greenville—Washington County, Howard Dyer, Clk., Bd. of Supvrs., sold \$300,000 road bonds to Hibernia Bank & Trust Co., Bank of Commerce, and Whitney Trust & Savings Bank, all New Orleans, La., and Saunders and Thomas, Inc., Memphis, Tenn. 4-30

Miss., Greenwood—City sold \$12,000 fire department equipment and apparatus bonds to Merchants Bank & Trust Co., Jackson.

Mo., Kansas City—City sold \$300,000 general fund anticipation notes to Seipp, Princell & Co., Chicago.

N. C., Greensboro—City, E. G. Sherrill, Treas., sold \$500,000 bond anticipation notes to North Carolina Bank & Trust Co.

Okla., Sapulpa—City sold \$259,000 funding bonds to R. J. Edwards, Inc., and Calvert & Canfield, both Oklahoma City, jointly, at 100.50.

S. C., Dillon—City recently sold \$56,000 bonds to J. H. Hilsman & Co. and Citizens & Southern Co., both Atlanta, Ga., jointly.

S. C., Greenwood—Greenwood County sold \$100,000 bonds to Central Union Bank of South Carolina, at 100.50.

Tenn., Springfield—City sold \$15,000, 5% school refunding bonds to Charles E. Bell, Springfield.

Tex., Crockett—Houston County sold \$160,000 road bonds to Walter, Woody & Helmerdinger, Cincinnati, Ohio.

New Financial Corporations

Ga., Atlanta—H. C. Williams & Co., 823-24 Mortgage Guarantee Bldg., partnership composed of H. C. Williams and Hugh C. Williams, formed to specialize in bonds guaranteed by other surety firms and in fixed trust issues; also conduct general securities business.

N. C., Charlotte—Empire Investment Co., capital \$100,000, chartered; V. J. Guthery, Jr., Guthery Apts.

Tenn., Saltillo—Bank of Saltillo, capital \$10,000, chartered; L. A. Parker, T. C. Smith.

Tex., Dallas—Ulen Securities Co., Donald O'Neill, Pres., formed by Ulen & Co., Lebanon, Ind.; will deal in municipal, corporate and government bonds in co-operation with Ames, Emerich & Co., Chicago, Ill.

Va., Clintwood—Stockholders of Dickenson County Bank plan organizing bank to be known as Dickenson County Bank & Trust Co., capital \$100,000; will acquire assets of Dickenson County Bank, recently closed.

Eastern Bond & Mortgage Co., opened offices 509 Capital Club Bldg., Raleigh; C. H. Goodwin, Mgr.; Julius S. Peel, Atty.

First National Bank, Smith Price, Pres., Longview, Tex., increased capital stock, \$60,000 to \$100,000.

Farmers' and Merchants' National Bank, Wood Nash, Pres., and First National Bank, A. Nash, Pres., both Kaufman, Tex., merged.

Winter Garden State Bank, J. Schwartz, Pres., acquired Zavalla County Bank, S. Piques, Pres., both Crystal City, Tex.

Financial Notes

Engineers Public Service Co.

Gross earnings of the Engineers Public Service Company, New York, and constituent companies for March, 1931, amounted to \$4,167,275, as compared with \$4,160,456 for March, 1930. Net operating revenue for March, 1931, amounted to \$1,676,839, as against \$1,737,538 for March of last year. For the 12 months ended March 31, 1931, gross earnings were \$53,000,230, as compared with \$51,464,589 for the 12 months ended March 31, 1930.

Atlanta, Birmingham and Coast Railroad

For the year ended December 31, 1930, operating revenues of the Atlanta, Birmingham and Coast Railroad Company amounted to \$4,098,579, as compared with \$4,719,692 for 1929, according to the fourth annual report of the company. Operating expenses for 1930 were \$4,354,937, as compared with \$4,644,372 for 1929.

(Continued on page 70.)

AMERICAN ELEVATORS

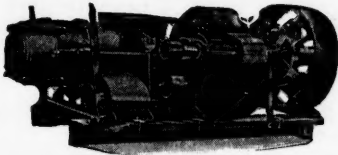
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AMERICAN
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Price for Price -- and BETTER COMPRESSORS

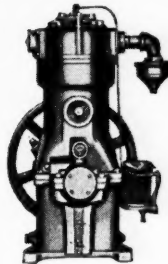
The unusual value in Quincy Compressors is not that prices are in line but that for the same price we are definitely delivering a better piece of machinery.

Quincy true value is based on the many things that produce economy of operation, freedom from petty troubles, and long life.

Quincy Compressors are "quality" compressors, made for those who appreciate that the *final* cost of any piece of machinery is purchase price plus cost of operation. That is why Industrial users are such large users of Quincys.

There's a size and type for every purpose, water cooled and air cooled, with displacements from 1 to 128 cu. ft.

Details on request. No obligation.



Model W

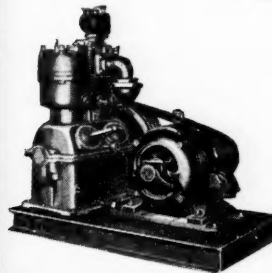
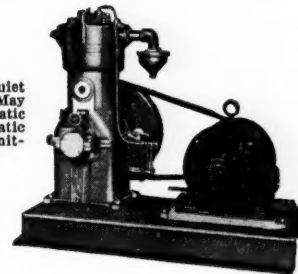
This is the compressor used in the Model WD Unit illustrated at right. Pilot type Suction Unloader and 99.9% efficient Air Filter furnished as extra equipment.

W-1	22 cu. ft.
W-2	39 cu. ft.
W-3	62 cu. ft.
W-4 Duplex	128 cu. ft.

Model WD

Single Stage water cooled, quiet multiple V-Belt drive. May be furnished with automatic pressure control or automatic unloaders for either intermittent or continuous service.

WD-1	22 cu. ft.
WD-2	39 cu. ft.
WD-3	62 cu. ft.
WD-4	128 cu. ft.



Model WD-4

A water cooled Duplex unit. Maximum displacement, 128 cu. ft. Maximum pressure, 150 lbs. Equipped with pressure unloader. Motor requirements, 15 to 20 H.P., depending upon pressure and displacement. Full pressure lubrication clear to the piston pins.

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P14B1

FINANCIAL NEWS

(Continued from page 68.)

1930 Earnings Show Increase

An increase in gross earnings of \$228,289, or 2.20 per cent, and an increase in net earnings of \$88,789, or 1.66 per cent, for the year ended December 31, 1930, as compared with 1929, is shown in the annual report of the Louisville Gas and Electric Company, Louisville, Ky. Gross earnings for 1930 amounted to \$10,566,387, as compared with \$10,338,098 for 1929, and net earnings to \$5,412,994, as compared with \$5,324,205. Construction expenditures in 1930 amounted to \$6,148,118, while a construction budget for 1931 calls for expenditure of \$3,100,000.

Missouri Pacific Railroad Report

For the 12 months ended December 31, 1930, railway operating revenues of the Missouri Pacific Railroad Company amounted to \$120,187,689, according to the company's fourteenth annual report. This compares with \$139,807,914 for 1929. Railway operating expenses for 1930 amounted to \$89,009,546, as against \$102,903,441 for 1929. Net revenue from railway operation for 1930 amounted to \$31,178,142, as compared with \$36,904,473 for 1929. Total operating income for 1930 was \$27,882,870, as against \$32,592,816 for 1929, while the gross income was \$25,742,494, as compared with \$30,001,390 for 1929. Net income transferred to profit and loss amounted to \$6,713,610 in 1930, as compared with \$12,217,763 in 1929.

Marsh & Saxelbye, Jacksonville, Fla., have been commissioned by the Treasury Department, Jas. A. Wetmore, Acting Supervising Architect, Washington, to prepare plans and specifications for a new \$1,500,000 postoffice building at Jacksonville.

Suggestion to Business Men

(From Wall Street Journal.)

With due respect for the modern spirit of inquiry and the usefulness of a mind open in all directions, the time has surely arrived for business men to cease echoing the blatant "challenge to the existing order" which has become the habit of schoolmen and the publicity stunt of maverick politicians. No doubt the college economists must be left to their uneasy lucubrations. Insurgent statesmen will grind their private axes when and as they can. But men of business who in moments of confusion or mistaken toleration fall in with the pack and give tongue to its reckless outcries, seemingly turn their backs upon responsibilities which they cannot avoid if they would.

Seemingly only, for as a matter of fact the very business men who publicly take part in this futile and troublesome talk of a challenge to the existing order, of failure of the capitalist system, are privately carrying on with devotion to the institutions and communities of which they are a part. It is just because they and their like do carry on with energy and an abiding faith that what has availed in adversity before will avail again that the country is assuredly weathering the storm.

No plea is made here for manufactured optimism. Nobody thinks that the existing order is perfect; hardly anybody is unwilling to give serious attention to proposals for its improvement when they come from men who know what they are talking about and honestly seek the common good. The point is, simply, that just now the challenge of the existing order, in its most vociferous forms,

comes too frequently from those who have only a dangerous half-knowledge of what they sapiently discuss, or those who have their own private reasons for beating the air.

If a suggestion to business men may be ventured here, it is that they control their nerves against the noise of the political tomtoms; that for a time they leave grandiose challenging of the existing order to those who make it their profession and apply their own energies to cultivating the revivifying power of the day's work.

\$500,000 Sewer and Water Bonds

Washington, D. C.—The Washington Suburban Sanitary District has sold an issue of \$500,000 water main and sewer construction 4½ per cent bonds to a Baltimore syndicate composed of the Union Trust Company of Maryland, Equitable Trust Company, W. W. Lanan & Co., Colston, Heald & Middendorf and C. T. Williams & Co. The purchase price was 105.131.

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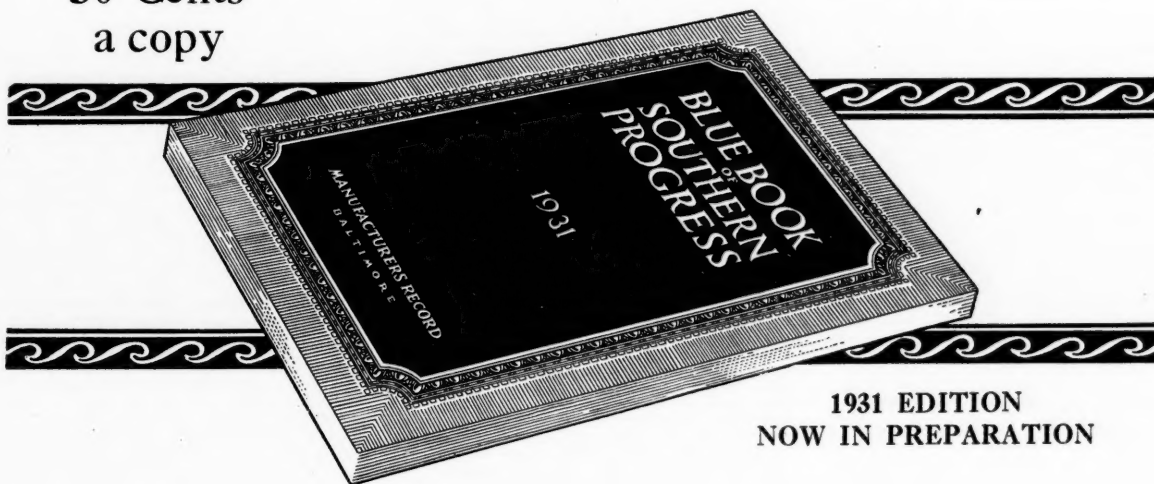
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Bids close June 4, 1931.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., May 7, 1931.—SEALED BIDS in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 4, 1931, for furnishing all labor and materials and performing all work for the extension and remodeling of the U. S. court house and post office at Opelousas, La. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close May 27, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., April 29, 1931.—SEALED BIDS, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., May 27, 1931, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, etc., Bath, N. Y. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding 3 sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 2, 1931.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., May 5, 1931.—SEALED BIDS, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 2, 1931, for furnishing all labor and materials and performing all work for the construction, etc., of the U. S. post office at Lumberton, Miss. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 3, 1931.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., May 6, 1931.—SEALED BIDS, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 3, 1931, for furnishing all labor and materials and performing all work for the construction (except elevator) of the U. S. post office, court house, etc., at Rock Hill, S. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

GENERAL INFORMATION About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close June 2, 1931.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the U. S. Veterans Bureau, Room 764, Arlington Building, Washington, D. C., until 2:30 P. M., June 2, 1931, and then publicly opened for furnishing all labor and materials and performing all work required for constructing and finishing complete at U. S. VETERANS' HOSPITAL, ALBUQUERQUE, NEW MEXICO, Buildings and Utilities, including roads, walks, grading and drainage. This work will include excavating, reinforced concrete construction, hollow tile, brick work, cut stone, marble work, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, terrazzo, iron work, flag pole, steel sash, steel stairs with slate and metal treads, steel shelving, cabinets and partitions, tile, metal and built-up roofing, roof ventilators, metal lathing, plastering, stucco, sound deadening, carpentry, dumbwaiter, platform scale, metal weatherstrips, insect screens, window shades, painting, glazing, hardware, plumbing, vacuum cleaning system, steel water tank and tower, zeolite water softening system, refrigerating and ice making plant, boiler plant, reinforced concrete chimney, heating and ventilating, electrical work, electric elevators, nurses call system, fire alarm system and outside sewer, water, gas, steam and electric distribution systems. SEPARATE BIDS will be received for (a) General Construction including Reinforced Concrete Chimney; (b) Plumbing, Heating, Electrical Work and outside distribution systems; (c) Electric Elevators; (d) Steel Water Tank and Tower; (e) Zeolite Water Softening System; (f) Refrigerating and Ice Making Plant; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Director, drawings and specifications may be obtained upon application to the Construction Division, Room 764, Arlington Building, Washington, D. C. While no deposit will be necessary, return of drawings and specifications within ten days after date of opening bids will be required. In case no bid is to be submitted, the return of plans and specifications, as soon as this fact has been determined, and before the date for opening bids, is requested. Compliance with the requirement and with the request indicated will be considered in connection with future applications for drawing and specifications. GEORGE E. IJAMS, Director, April 25, 1931.

Bids close June 2, 1931.

War Department, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals in triplicate will be received until 10:00 A. M., June 2, 1931, and then publicly opened, for the construction and completion of Hospital, and the utilities thereto, at Fort Bragg, North Carolina. A certified check or bid bond in the amount of \$40,000.00 will be required with each bid. \$30.00 deposit certified check, payable to Treasurer of United States, required for drawings and specifications. Further information on request.

Bids close June 30, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., April 30, 1931.—SEALED BIDS in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 30, 1931, for furnishing all labor and materials and performing all work for the construction of the U. S. p. o. ct. h., etc., at Ponce, P. R. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding one set, may be obtained by any satisfactory general contractor at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 3, 1931.

U. S. Department of Agriculture, Bureau of Public Roads, Washington, D. C., May 6, 1931.—SEALED BIDS, single copy, subject to the conditions contained herein, will be received until eleven o'clock a. m. June 3, 1931, and then publicly opened, for furnishing all labor and materials, and performing all work for Unit II, of the Colonial National Monument Parkway. Unit II begins at the south side of the first draw south of the Officers' Quarters of the Navy Mine Depot, and extends north along the shore of the York River to a point north of Indian Field Creek, a distance of approximately 4400 feet, and also includes the fill across Felgate's Creek, a distance of approximately 1200 feet. Unit II lies entirely within the limits of the Navy Mine Depot, in York County, Virginia. Bids will be opened at the office of the Bureau of Public Roads, Willard Building, Washington, D. C. Information for bidders, together with forms and questionnaires, may be obtained in the office of the Bureau of Public Roads, Willard Building, Washington, D. C., or at the office of the Park Superintendent, Yorktown, Virginia. Unit II consists of approximately 1,000,000 cubic yards of Hydraulic Fill (cut measurement) for the construction of a roadway located as above described. Guarantee will be required with each bid as follows: 5 per cent of the amount of the bid. Performance bond will be required as follows: In the amount of 100 per cent of the total contract price. Liquidated damages for delay will be \$20.00 per day for each calendar day of delay until the work is completed and accepted. Partial payments will be made as the work progresses on work and material if such work and material meets with the approval of the Contracting Officer. Article on patents will be made a part of the contract. Bids must be submitted upon the Standard Government Form of Bid and the successful bidder will be required to execute the Standard Government Form of Contract for Construction. The right is reserved, as the interest of the Government may require, to reject any and all bids, to waive any informality in bids received, and to accept or reject any items of any bid, unless such bid is qualified by specific limitation. Envelopes containing bids must be sealed, marked, and addressed as follows: "Bid for Unit II, Colonial National Monument Parkway, Bureau of Public Roads, Willard Building, Washington, D. C. To be opened at 11.00 a. m., June 3, 1931. Submitted by....." (Name of Contractor)." Thos. H. MacDonald, Chief of Bureau.

Bids close May 21, 1931.

U. S. Engineer Office, Jacksonville, Fla.—Sealed bids, in duplicate, will be received here until 12 noon, May 21, 1931, and then opened, for lease and operation of one drag-line excavator in Caloosahatchee-Lake Okeechobee Drainage Areas, Fla. Further information on application.

Bids close May 25, 1931.

U. S. Engineer Office, Jacksonville, Fla.—Sealed bids, in duplicate, will be received here until 12 noon, May 25, 1931, and then opened, for furnishing all labor, equipment and accessories and performing all work for core drilling in Lake Okeechobee, Fla. Further information on application.

Bids close June 2, 1931.

U. S. ENGINEER OFFICE, First New Orleans District, Poland and Dauphine Streets, New Orleans, La.—SEALED BIDS, in duplicate will be received until 3 p. m., June 2, 1931, and then publicly opened, for furnishing all labor and materials and performing all work for dredging the Louisiana and Texas Intracoastal Waterway, Atchafalaya-Vermillion section from the Atchafalaya River to Bayou Gregorie, La., comprising 4,988,800 cubic yards, place measurement. Further information on application.

Bids close May 18, 1931.

TREASURY DEPARTMENT, office of the Supervising Architect, Washington, D. C., May 2, 1931.—SEALED BIDS in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., May 18, 1931, for furnishing all labor and materials and performing all work for the preliminary excavation for the archives building at Washington, D. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding one set, may be obtained by any satisfactory general contractor at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close May 19, 1931.

Maryland Highway Work DEPARTMENT OF PUBLIC WORKS STATE OF MARYLAND STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building four sections of State Highway as follows:
Baltimore City—Contract No. BC-103-72—One section of State Highway along Arlington Avenue from Grindon Avenue to the Harford Road, a distance of 0.45 miles (Sheet Asphalt)
Charles County, Contract No. Ch-105-84—One section of State Highway along the Hughesville-Burnt Store Road from the end of Contract No. Ch-84 to Burnt Store, a distance of 1.87 miles (Gravel)
Harford County, Contract No. H-121-42—One section of State Highway from Shooks Corner to Thomas Run, a distance of 1.76 miles (Macadam)
Prince George's County, Contract No. P-164-311—One section of State Highway along the Baltimore-Washington Boulevard, from Hyattsville to the District Line, a distance of 2.16 miles (Concrete Surfacing and Channel Excavation of Anacostia River)

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Sts., Baltimore, Maryland, until 12 M. on the 19th day of May, 1931, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 5th day of May, 1931.

G. CLINTON UHL, Chairman.
L. H. STEUART, Secretary.

Bids close June 2, 1931.

Roads and Bridges

Richmond, Va.

Sealed bids will be received 10 A. M., Va. Dept. of Highways, Tuesday, June 2, 1931, Richmond, Va., for the construction of:
Proj. S260—6 Mi. Conc., 13,339 Excava., 38,627 Sq. Yds. S306—6 Mi. Gravel, 5000 Excava., 19,517 Cu. Yds. S361G—.08 Mi. Mac., 7250 Excava., 943 Sq. Yds. S507—3 Mi. Gr. and Dr., 60,940 Excava., Cu. Yds. Conc. 364 S590D—3 Mi. Soil. 49,055 Excava., 9608 Cu. Yds. S656—8 Mi. Gr. and Dr., Excava. 48,616, Cu. Yds. Conc. 47. S678—5 Mi. Soil, 51,369 Excava., 16,046 Cu. Yds. S681—2.5 Mi. Gravel, 15,606 Excava., 8181 Cu. Yds. S682—4 Mi. Gr. and Dr., 24,263 Excava., Cu. Yds. B Conc. 36. S697—2 Mi. Soil, 20,430 Excava., 5990 Cu. Yds. and Br. over Roanoke Cr., Cu. Yds. A Conc. 232. Lbs. Reinf. Steel 35,815. S702—1.7 Mi. Soil, 17,075 Excava., 5816 Cu. Yds. S416D—9 Mi. Shale, 5000 Excava., 19,014 Cu. Yds. S380—9 Mi. Slag and Gravel, 5000 Excava., 22,000 Cu. Yds. P692AB1—5.5 Mi. Soil, 62,642 Excava., 18,174 Cu. Yds. and Br. over Appomattox Riv., Cu. Yds. A Conc. 287. Lbs. Reinf. Steel 41,180; bridge to be separate contract. Details obtainable upon request.

Bids close June 2, 1931.

Louisiana Highway Work

Baton Rouge, La.

Sealed Proposals for the construction of the following Project will be received by the Louisiana Highway Commission, Room No. 614 Louisiana National Bank Building, Baton Rouge, Louisiana, until 9:45 A. M. on Tuesday, June 2, 1931. Proposals will not be received after this hour. At 10 o'clock A. M. of the same day and date they will be publicly opened and read in the Chamber of the House of Representatives in the State Capitol Building.

BOND PROJECT NO. 1102, LYLES-FENTON HIGHWAY. Located in ALLEN and JEFFERSON DAVIS PARISH, Route 24. Length 10.7 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

BOND PROJECT NO. 1406, ROSEWOOD-MOREAUVILLE HIGHWAY. Located in AYOUELLES PARISH, Route 30. Length 6.5 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 1505, GILLIS-INTERSECTION ROUTE 7 HIGHWAY. Located in CALCASIEU and BEAUREGARD PARISHES, Route 42. Length 9.2 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 1705, BENTON-PLAIN DEALING HIGHWAY. Located in BOSSIER PARISH, Routes Nos. 10 and 70. Length 15.7 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$3.00.

BOND PROJECT NO. 1908, SULPHUR-CARLYSS HIGHWAY. Located in CALCASIEU PARISH, Route 104. Length 4.9 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$1.50.

BOND PROJECT NO. 2701, TRANSYLVANIA-ENOKA HIGHWAY. Located in EAST CARROLL and MADISON PARISHES, Route 3. Length 10.6 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

BOND PROJECT NO. 3505, ELTON-KINDER HIGHWAY. Located in JEFFERSON DAVIS and ALLEN PARISHES, Route 7. Length 10.5 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

BOND PROJECT NO. 3702, LAFAYETTE NORTH AND EAST HIGHWAY. Located in LAFAYETTE and ST. MARTIN PARISHES, Routes 43 and 5. Length 9.1 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 4410, CHOPIN-ZIMMERMAN HIGHWAY. Located in NATCHITOCHES and RAPIDES PARISHES, Route 20. Length 7.3 miles, width

18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 4610, MONROE-ARCHIBALD HIGHWAY. Located in OUACHITA and RICHLAND PARISHES, Route 15. Length 11.0 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

BOND PROJECT NO. 4806, LETTS-WORTH-SIMMESPORT HIGHWAY. Located in POINTE COUPEE PARISH, Route 30. Length 6.8 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 4914, ZIMMERMAN-RAPIDES HIGHWAY. Located in RAPIDES PARISH, Route 20. Length 9.7 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 5206, FLORIEN-HORNBECK HIGHWAY. Located in SABINE and VERNON PARISHES, Route 42. Length 10.3 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

BOND PROJECT NO. 5900, LAFAYETTE-ST. MARTIN PARISH LINE-NINA HIGHWAY. Located in ST. MARTIN PARISH, Routes 43 and 25. Length 9.2 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 5902, ST. MARTINVILLE-BREAUX BRIDGE HIGHWAY. Located in ST. MARTIN PARISH, Route 25. Length 11.2 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

BOND PROJECT NO. 6301, ST. JOSEPH NORTH AND SOUTH HIGHWAY. Located in TENSAS PARISH, Route 3. Length 8.0 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.00.

BOND PROJECT NO. 6603, KAPLAN-GUEYDAN HIGHWAY. Located in Vermillion Parish, Route 25. Length 13.0 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

BOND PROJECT NO. 6704, HORNBECK-HAWTHORN HIGHWAY. Located in VERNON PARISH, Route 42. Length 10.9 miles, width 18 ft. Type: Portland Cement Concrete Pavement and other work in connection therewith. Charges for plans \$2.50.

Full information and proposal forms are available at the office of the Highway Commission at Baton Rouge. Plans and specifications may be inspected there or will be furnished upon payment of the amount specified above (not to be refunded).

HARRY B. HENDERLITE,

State Highway Engineer.
O. K. ALLEN, Chairman,
Louisiana Highway Commission.

Bids close June 2, 1931.

Road Construction and Materials

Bastrop, La.

The Police Jury of Morehouse Parish will receive bids up to 11 A. M., Tuesday, June 2nd, at Bastrop, La., and at that time and place publicly opened and read proposals for the unloading, hauling and spreading and for gravel for the surfacing of the following projects:

Project No. 5 Road and Bridge District No. 4, length 4 miles.

Project No. 100 Road District No. 1, length 1 mile.

Also for the construction of roadbed, including surfacing and for the gravel for the following projects:

Project No. 200 Road District No. 1, length 3 1/4 miles.

Wardville Lane, length 1 mile.

Information governing manner of submitting proposals, terms of payment and proposal blanks for submitting bids on the above work may be secured upon application at the Parish Engineer's office at Bastrop, Louisiana. A certified check in the amount of 5% of the amount bid must accompany each proposal and a surety bond in the amount of 50% of the total amount bid will be required when contract is awarded.

J. LESTER WHITE,
Parish Engineer.

J. W. BRODNAX,
President, Police Jury.

Bids close May 26, 1931.

Water Supply Works

Lebanon, Tenn.
Sealed proposals for furnishing materials and constructing additional water supply works will be received by the City of Lebanon, Tennessee, at the City Hall until 2:00 p. m., May 26, 1931.

The work will consist of constructing a raw water pumping station, a filtration plant of 1,500,000 gallons daily capacity and laying approximately six miles of cast iron pipe.

Each proposal must be accompanied by a certified check payable to the City of Lebanon, in an amount equal to five (5%) per cent of the bid, as a guarantee that the contract will be entered into, if awarded. A bond equal to one hundred (100%) per cent of the contract price will be required of the successful bidder as surety that he or it will pay for all materials and labor used in said contract and for the faithful performance of same.

Plans and specifications are on file at the office of the Commissioner of Public Works at Lebanon, Tennessee, and with Wiedeman and Singleton, Engineers, Atlanta, Ga.

Bidders may obtain copies of the plans and specifications from the Engineers by enclosing certified check for twenty-five (\$25.00) dollars, payable to the Engineers, fifteen (\$15.00) dollars of which will be returned upon the return of the plans and specifications, or upon the submission of a bona fide bid. The City reserves the right to reject any or all bids.

FRANK BUCHANAN,
Mayor.

Bids close May 19, 1931.

Cast Iron Pipe Line

Ormond, Fla.
Sealed proposals will be received by the Town of Ormond, a Municipal Corporation of Volusia County, Florida, through its Board of Zone Managers at the office of the Clerk of said Town at Ormond, Florida, until ten o'clock A. M. on the 19th day of May, A. D. 1931, for furnishing labor and material for the construction and laying of cast iron pipe in the Town of Ormond, Florida. The work will comprise about 3000 feet of 10 inch Diam. Cast Iron Pipe, on land and under water as provided by the plans and specifications of said project on file in the office of the Clerk of said Town of Ormond, Florida.

Bids will be received on the whole of said work, or any portion thereof.

Plans and specifications may be examined at the office of the Town Clerk of Ormond, Florida, or may be obtained for the sum of \$15.00 on applying at the office of said Town Clerk.

Each bidder must accompany his bid with

a certified cheque for \$1000.00 made payable to the order of L. O. Van Sickle, Clerk Town of Ormond, Florida.

The right is reserved to reject any or all bids either in whole or in part or to accept any bid either in whole or in part as the best interests of the Town may appear.

A. G. BOYNTON, W. F. MORRIS, Chmn.
Engineer in Charge, HENRY FUTCH,
Ormond, Florida. J. HENRY DECUMBE,
As and constituting the Board of Zone
Managers of said Town.

Bids close July 7, 1931.

Electric Light Plant

Ocala, Fla.
NOTICE is given that City Council, Ocala, Florida, on July 7th, 1931, at 8 P. M., will consider sealed proposals for furnishing and installing machinery in its Electric Light Plant. The costs thereof to be paid out of savings and/or earnings of plant.

Right is reserved to reject any and all proposals. If interested write
J. R. MARTIN, City Manager.

Bids close May 20, 1931.

Sewers and Pumping Plants

Blytheville, Ark.
Notice is hereby given that sealed bids will be received by the Commissioners of Sewer Improvement District No. Three, of the City of Blytheville, Arkansas, until 10 o'clock A. M. May twentieth, 1931, at the City Hall, in the City of Blytheville, Arkansas.

The work contemplated consists of approximately the following:

- 19825 Lin. Ft. of 8 inch sewer laid complete.
- 3778 Lin. Ft. of 10 inch sewer laid complete.
- 3590 Lin. Ft. of 12 inch sewer laid complete.
- 3055 Lin. Ft. of 15 inch sewer laid complete.
- 48 Lin. Ft. of 10 inch Cast Iron Pipe sewer laid complete.
- 80 Lin. Ft. of 12 inch Cast Iron Pipe sewer laid complete.
- 67 Manholes.
- 24 Flush Tanks.
- 7 Drop Manhole Construction.
- 590 8 x 6 Wyes.
- 10 10 x 6 Wyes.
- 79 12 x 6 Wyes.
- 23 15 x 6 Wyes.
- 36 8 x 6 Tees.
- 6 10 x 6 Tees.
- 6 12 x 6 Tees.
- 6 15 x 6 Tees.
- 150 Lin. Ft. Chimney Pipe Construction.
- 8 Cu. Yds. 1-2-4 Concrete.
- 3000 Lin. Ft. Special Bottom Construction.
- 20000 Ft. B. M. Sheet piling left in ditch.
- 120 Sq. Yds. Pavement repairs.
- Pumping Plant No. 1.
- Pumping Plant No. 2.
- Imhoff Tank and Sludge Bed.
- 7000 Lin. Ft. 6 inch House Connections.

The quantities given above are approximate and will be used for comparison of bids. They may be increased or decreased as the Board may deem advisable.

Bidders are warned that they must visit the locality before bidding and make thorough examination of the local conditions and difficulties governing the execution of the work, as the District will not be responsible for the bidders' errors or misjudgment concerning the nature of the soil, difficulties or obstructions other than information comprised in the Plans and Specifications.

All bids must be made on blank forms furnished by the Engineer.

All bids must be accompanied by a Certified Check on some responsible Arkansas Bank, made payable to the District, in a sum equal to FIVE PER CENT of the bid, or a Proposal Bond, equal to FIVE PER CENT of the bid, properly executed by a Surety Company authorized to do business in the State of Arkansas, and executed by an Authorized Agent in Blytheville, Arkansas, as a guarantee that Contract will be entered into and Construction Bond will be furnished by the bidder upon due notice that his proposal has been accepted.

All bids not in conformity with this notice will be rejected.

A Construction Bond in double the amount of the contract will be required of the successful bidder guaranteeing the completion of the contract according to the Plans and Specifications and Instructions from the Engineer.

Plans and Specifications are on file with the Secretary of the District, where they may be examined or a complete set may be had from the Engineer upon receipt of \$25.00, none of which will be refunded.

The right is reserved to reject or accept any or all proposals.

Sewer Improvement District No. Three.
ADDISON SMITH, Secretary.
E. J. HEATON, Engineer.

Bids close May 23, 1931.

Concrete Sea Wall

Easton, Md.
Sealed Proposals will be received by the undersigned at their office, Room 204, Stewart Building, Easton, Maryland, at 12 o'clock (noon), Saturday, May 23, 1931, for the construction of approximately seven hundred lineal feet (700 lin. ft.) of Concrete Sea Wall, ranging from three (3) feet to six (6) feet high, at "Halcyon," the property of P. A. Rose, Talbot County, Maryland. The owner reserves the right to reject any or all bids.

Plans, specifications and proposal blanks may be had of the Engineers.

For the Owner.

KASTENHUBER & ANDERSON,
Engineers.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

FOR SALE OR TRADE

500 Acres in fee of valuable Fire Clay, Coal and Timber Lands, located in Carter County, Ky., on C. & O. Railway.
BOX 623, ASHLAND, KENTUCKY.

KENTUCKY FIRE CLAYS

FOR SALE

High grade Kentucky Flint semi-hard and Plastic Fire Clays. Mines located in Olive Hill District. Carter County Fire-clay Corp., Executive Office 212-214 Second National Bank Building, Ashland, Ky.

BRICK SHALE

FOR SALE—Heavy beds of finest Building Brick Shale. Analysis by Georgia State Geological Survey of Atlanta, Ga., shows it suitable for the manufacture of high-grade building brick, building tile, drain tile, or tile roofing. Located three miles south of Chattanooga, Tenn., near Central of Ga. Railroad. If interested see
T. W. BROWN,
care Brown Fence Co., Chattanooga, Tenn.

TIMBER AND TIMBER LANDS

50,000 ACRES 600,000,000 feet Virgin pine timber in Mexico. \$2 per acre in fee.
JNO. W. CLEMENTS,
516 Sydney St., S. E., Atlanta, Ga.

Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

- 100 lines 28c a line
- 300 lines 26c a line
- 500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS. No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

FARM, FRUIT AND TRUCK LANDS

FREE HOMESTEADS—640-320-160 acres, some improved, some irrigated; 18 states (Ark., Cal., Ore., etc.); maps, "700 Facts"—30c No. 9106, care Manufacturers Record.

MISSISSIPPI

FOR SALE

FARM for sale; 620 acres farm land, wonderful cattle and chicken farm, also has about 3 miles of gravel, 9 miles from Patterson, Miss. If interested address 2137 St. Charles Ave., New Orleans, La.

TEXAS

LOWER RIO GRANDE Valley orchards and acreage at actual value. Owner's price direct to you. Send for list. ROBERTS REALTY CO., Realtors, McAllen, Tex.

\$10 CASH—\$5 MONTHLY

\$500 buys 20 acres South Texas agricultural land. Farm Tract Co., 307 Oppenheimer Bldg., San Antonio, Texas.

VIRGINIA

865 ACRES near Richmond, Va. Fields, streams, woodland, buildings; lots of game. \$7.00 per acre.

OWNER, Box 441, Marlon, N. C.

BUSINESS AND INVESTMENT PROPERTIES

11,000 ACRE RANCH, in prospective oil and gas territory Southwest Texas, Winter Garden District. Soil adapted to growing citrus fruits, dates and early winter vegetables. Will sell cheap. Address **OWNER**, Box 656, Houston, Texas.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. **THOS. W. GILMER**, Attorney, Bay Minette, Alabama.

MANUFACTURERS—Write for our **FREE** Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. **ADAM FISHER MFG. CO.**, 578 Enright, St. Louis, Mo.

BUSINESS OPPORTUNITY—Modern Vertical Stripe Men's Hosiery Mills wants Manager. Must have not less than four thousand dollars to invest, also experience in manufacturing and selling half hose. Apply Box 35, Woodland, Ga.

HAVE COMPLETE OUTFIT for two or three hundred thousand yard dirt job. Wish to bid with paving contractor financially competent. Or will rent cranes equipped as shovel, dragline or pile driver. Also other equipment. **R. A. Helmer**, care of Citizens' Bank, McClenny, Fla.

LOCATION WANTED for manufacturing loose leaf pasteless slip-in kodak album sheets to be sold through ten cent stores. Repeat article 100% manufacturing profit should net \$100.00 daily, giving employment to about 10 people. Management will be given entirely into hands of parties who acquire half interest in U. S. and Canadian patents thereon for \$2,000.00. Write **P. O. Box 1079**, Charleston, Kanawha Co., W. Va.

PARKERSBURG.

Successful manufacturers are invited to join this city's colony of prosperous, medium sized, diversified industrial plants.

BOARD OF COMMERCE, Parkersburg, West Virginia.

WANTED—A partner to purchase half interest in mill and equipment and three hundred million feet of hardwood stumpage, seventy-five per cent of which is Appalachian Oak. Also to have full charge of financing and lumber sales. Stumpage is owned at \$2.00 per M. log scale. **Doyle's Rule**. Money to be used for working capital and paying balance due on stumpage. This is a bargain for the right party. Do not answer unless you have money to invest. Address No. 9105, care of Manufacturers Record, Baltimore, Md.

BUSINESS OPPORTUNITY: I have available suitable space, improved modern type machinery and equipment necessary for wood-working plant—furniture or other wood products. Also considerable standing timber. Would like to make connection with right party or parties interested in proposition of this kind. Would require some capital and absolute knowledge of business you would be interested in. Location good. Reputation already established for making A-1 products. Address No. 9103, care of Manufacturers Record, Baltimore, Md.

ENGAGEMENT DESIRED

Major or minor executive capacity. Devoting **EXPERIENCE, INITIATIVE, RESOURCEFULNESS, ENERGY** to Plant Operation, Publicity Achievement, Business Management, Contact Missions, Sales Development, Project Promotion, Field Construction, General Contracting. **STEEL PRODUCTS—CONSTRUCTION MATERIALS—EQUIPMENT**. Available on short notice. **J. W. LEROUX**, Structural Engineer. M. Am. Soc. C. E., M. Fla. Eng. Soc., Fla. License 1460. Address P. O. Box 2852, Tampa, Florida.

FINANCIAL

WANTED MONEY to discount gilt-edge securities. Good interest. Good discount. Absolutely safe investment. Address **H. T. HICKS**, Attorney, Wrightsville, Ga.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO., Woolworth Building New York City

INDUSTRIAL PLANTS**FOR SALE**

Approximately 8 acres of land, 500 feet railroad siding, Pattern and Machine shops, air compressor with electric motors, electric motor generator, cupola, blower and other equipment. Situated on the Birmingham-Washington division of Southern Railway, Anniston, Ala. Address **P. O. Box 137**, Anniston, Ala.

ROLLER MILL FOR SALE—100 Barrel Roller Mill for sale, located at Glade Spring, Va., on the Norfolk & Western Railway; has private siding. This mill is fully equipped and ready for operation. The power consists of a 100 H.P. Boiler and a 50 H.P. Engine. (Electricity is available if wanted.) The ground floor of the building is 38 ft. x 131 ft., the second floor is 38 ft. x 90 ft. and the third floor 38 ft. x 40 ft. Engine room 35 ft. x 40 ft., with large concrete basement under main building. The lot has a frontage of 420 feet and average depth of 200 feet. This property can be bought at a real bargain. For further information write **Atkins & Buchanan**, Real Estate Agents, Glade Spring, Va.

FACTORY BUILDINGS

750 H.P. WATER POWER and about the same Steam Power. Factory must be sold immediately at sacrifice, containing 253,000 square feet of floor space; 59 miles from N. Y. City; water and rail transportation. Full particulars upon request.

LOEB & SCHOENFELD CO., 1123 Broadway, N. Y. C.

FACTORY SITES

TWO AND ONE-QUARTER MILES railroad frontage industrial sites for sale at Baton Rouge. Southern Land and Investment Company, Baton Rouge, La.

WEST VIRGINIA FACTORY SITE

Adjoining town. Along with good water power electric plant. Also fuel oil auxiliary for emergency use. On railroad siding. Will lease or sell. Prices reasonable. Development desired. Will offer inducements. Address No. 9097, care Manufacturers Record.

MANUFACTURING AND STORAGE SITES

Large body of land located in the City of Charlotte, North Carolina. One mile from center of city. Population ninety thousand. Land located in heart of Textile District. Available skilled labor. Accessible to Railroads, Street Railways, Hydro-Electric Power. Fronting Hard-surface Street; Water and Sewerage. Approximately two hundred acres. Ideal location for manufacturing and storing enterprises. Will sell upward to meet requirements.

PEGRAM-WADSWORTH LAND CO.

(Owners), Office, 219 N. College St., Charlotte, N. Car.

PATENT ATTORNEYS

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

PATENTS—Booklet free. Highest references. Best results. Promptness assured. **WATSON E. COLEMAN**, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. **PATENTS, TRADEMARKS, COPYRIGHTS**. Prompt and thorough service. Suite 892 National Press Building, Washington, D. C.

PATENT ATTORNEYS

PAUL B. EATON, Patent Attorney, 1408-R Johnston Bldg., Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

REPRESENTATIVES WANTED

WE MAKE Water Conditioning Chemicals and desire to communicate with men now active, calling on the power trade or handling boiler room specialties. Work is highly remunerative. Address No. 9080, care of Manufacturers Record.

PUMP MANUFACTURER has several open territories in South. He would like to contact with sales representatives, covering building engineers, municipal engineers, and industrial. Line includes high and low pressure Centrifugal Pumps of capacities up to 3000 GPM, non-clogging pumps up to 7500 GPM., and axial flow pumps for low heads up to 20,000 GPM. A profitable line of equipment for a good Engineers Sales Organization. Address No. 9091, care Manufacturers Record, Baltimore, Md.

SITUATIONS WANTED

BUSINESS WOMAN, with secretarial experience, wants position as Manager of Apartment House. References. Address No. 9108, care Manufacturers Record, Baltimore.

ENGINEER SALESMAN with car, Mem. Am. Soc. C. E., long experience structural and architectural engineering, later 8 yrs. selling securities for prominent engineer-bankers, wants job selling products used in construction. **C. Worthington**, Plant City, Fla.

POSITION WANTED by disabled Veteran as stenographer, assistant bookkeeper, bill clerk, dictaphone operator, salesman, typist, etc. Will consider work in printing office as linotype operator. **EMORY LOFTIS**, Route No. 4, Lake City, Florida.

MEN WANTED

WANTED—Man to take entire charge of operation of a machine shop. Must have sufficient executive experience to handle men most efficiently and to be able to design and build jigs and dies. Satisfactory references of past accomplishments necessary. Location, Alexandria, Va. Address No. 9107 care Manufacturers Record.

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty-one years. Send only name and address for details. **R. W. BIXBY, INC.**, 103 Downtown Bldg., Buffalo, New York

MACHINERY AND SUPPLIES

OIL ENGINES, Steam Engines, Motors, Shafting, Pulleys, Hangers. All kinds transmission and motive power equipment. Exceptionally low prices. Write or wire **STANDARD MILL SUPPLY COMPANY**, 1301 Waldheim Building, Kansas City, Mo.

FOR SALE—12 cylindrical storage tanks. Will stand 250 pounds pressure. 48" diameter, 72" high, 1/4" steel shell, 3/4" convexed heads, 3/4" convexed bottom. One seam in shell, double riveted. To move entire lot very close price made upon application. **YODER & GORDON, INC.**, Norfolk, Va.

WOOD WORKING MACHINERY FOR SALE

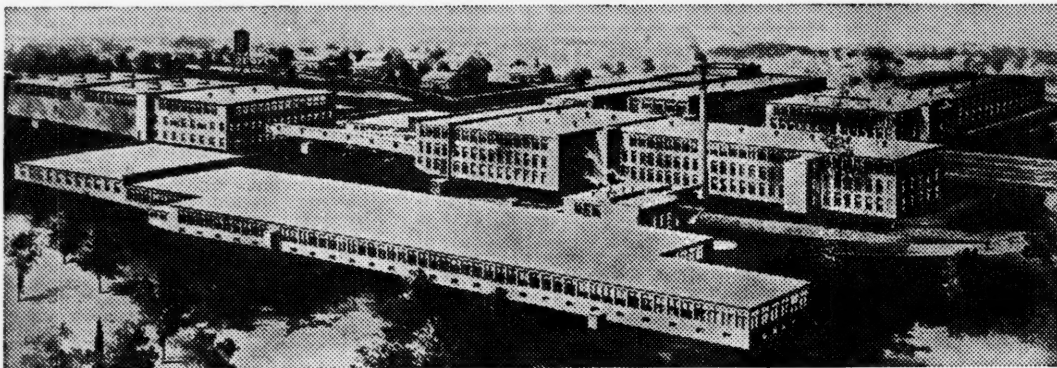
In Excellent Condition: None Over Year Old.
1 Hermance Hollow Arm Sander, including New Howell 2 HP, 220 Volts, 60 cycles motor. Price\$175.00
1 Knorsk Motorized Coper with motor and coping heads. Price\$150.00
1 H. B. Smith No. 510B Iron Sash and Door Clamp completely equipped. Price\$150.00
1 Hesson & Anderson No. 10 Electric Bench Saw Table, complete with saws, etc. Price\$200.00
Above prices f. o. b. Norfolk, Virginia.
WHITE MILLWORK CORPORATION, Norfolk, Virginia.



SPECIAL ADVERTISEMENTS OF GENERAL INTEREST



SOUTHERN MANUFACTURING CO., ATHENS, GEORGIA,



**WILL
BE
SOLD
AT
BANK-
RUPT
SALE**

By virtue of an order of Honorable W. G. Cornett, Referee in Bankruptcy, the property of the Southern Manufacturing Company will be sold at auction on May 26, 1931 in the U. S. Court Room at Athens, Georgia, twelve o'clock noon, to the highest bidder for cash, all bids subject to confirmation by the Court.

THE PROPERTY is located at Athens, Georgia, with frontage on main line of Seaboard Air Line Railway between Atlanta, Georgia, and Richmond, Virginia.

ATHENS, GEORGIA is situated in the Piedmont Plateau section of the southeast, at an elevation of 800 feet above sea level, and is in one of the healthiest sections of the United States.

EQUIPMENT: Comprises 96 Waste Cards, 66 Cotton Cards, 17,640 Ring Spindles, 10,365 Woolen Mule Spindles of type especially adapted and used for Spinning Waste, 4,320 Pease Ring Spindles, making total of 32,325 of Ring Mule and Pease Spinning equipment; also 1,664 Twister Spindles, and 674 Looms. Complete Sprinkler and Humidification System.

BUILDINGS: Four main buildings, Brick with Gravel Roof.

Mills Nos. 1, 2, 3 and 4; also Slasher Room, Boiler Plant, Warehouses, Opening Room for Cotton for No. 2 Mill.

DWELLINGS: 110 Frame Dwellings, 2 Brick Tenements, 1 Frame Community House, 1 Frame Office Building.

PERSONAL PROPERTY: Supplies, fuel, waste for resale, raw stock, finished goods, nursery, automobiles, machinery held for re-sale, furniture and fixtures, trade marks, and trade names, and all other personal property.

VALUES: The National Appraisal Company in 1928 valued the property as follows:

Replacement value	\$2,186,400.50
Depreciated value	1,740,977.60
Now carried on the books with due allowances made for depreciation.....	1,631,617.78

The above property will be sold free from and/or subject to liens, and to the highest bidder.

For further information apply to:

ERWIN, ERWIN & NIX, { Attorneys for Trustees,
GREEN & MICHAEL, { Athens, Georgia.

A. G. DUDLEY, { Trustees in Bankruptcy,
ANDREW C. ERWIN, { Athens, Georgia.
R. O. ARNOLD, {



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



BOILERS

2—400 H.P. Springfield water tube, 225 lb. pressure, ASME.
1—150 H.P. 72"x18" Return tubular, 150 lb. pressure, ASME.
1—125 H.P. Locomotive, 125 lb. pressure, ASME.

GENERATOR SETS

200—KVA 220 vt. 3 ph. 60 cy. Burke with Filler Stowell Uniflow Engine.

2—50 KVA 220 vt. 3 ph. 60 cy. Ridgway with Ridgway Engine.

HEATERS

2—1000 H.P. Cochrane open type feed water heaters.

EXCELLENT METAL WORKING TOOLS

48" x 18" Lodge & Shipley lathe, all geared head, AC motor dr.
38"—60" x 32" McCabe 2 in 1 lathe, belt drive, taper attachment
36" x 36" x 12" Cincinnati planer, belt drive, 2 heads
30" x 30" x 6" Detrick & Harvey openside planer, belt drive.
One side and one rail head
24" x 24" x 8" Cincinnati planer, belt drive, one head
2000 lb. Chambersburg steam hammer, double frame
1100 lb. Niles Bement Pond steam hammer, single frame
No. 1 Nazel hammer, belt drive, cap. 2" x 2"
48" Bickford vertical boring mill, belt drive, very good condition, low price.

THE O'BRIEN MACHINERY CO.
113 North Third Street Philadelphia, Pa.

IF IT'S NEW PIPE OR SECOND HAND

black or galvanized up to 12"—we have it. Cut and threaded to any length. **SPECIAL:** a carload of 3" or 4". Cheap at any time, rethreaded and coupled.

Your inquiry means—Another satisfied customer.

HUDSON PIPE AND SUPPLY COMPANY
34th Street and C. R. R. of N. J. Bayonne, N. J.

SELL THAT IDLE MACHINERY

Tell our readers about it through
THE RESALE DEPARTMENT
it may just suit the needs of someone.

Ask for rates

MANUFACTURERS RECORD, BALTIMORE, MD.



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



TRANSFORMERS— SALES AND REPAIR SERVICE

TWO COMPLETE 66 and 33 Kv. SUBSTATIONS
Full description and price on request.



A complete stock of transformers 1 to 1000 kva. Modern methods make our repair service second to none. Special service on breakdown jobs.

All transformers guaranteed for one year.
Write for Catalog No. 124-E.

The Electric Service Company, Inc.
"America's Used Transformer Clearing House"
212 Walnut St., Cincinnati, Ohio



PIPE NEW SECOND HAND

Overhauled and Tested
New Threads and Couplings
Established 1904

**Albert & Davidson
Pipe Corp.**

Second Ave., 50th-51st St., Brooklyn, N. Y.
Telephone Sunset 1900

MOTORS FOR SALE

1—100 HP Allis Chalmers Slip Ring, 60 cycle, 3 phase, 580 R.P.M., Type AN, 220 or 440 volt, with rails and Cutler Hammer Drum Type controller and complete set of resistance grids for starting duty, in first class condition.
4—30 HP, G-E, Type KT, Frame 323, 1750 R.P.M., 220 volt, 60 cycle, 3 phase, with CR1034 compensators, no bases or pulleys. ALL NEW.

Jefferis Brothers, West Chester, Pa.

OIL ENGINE

35 H.P. Alamo 12" bore, 18" stroke, 240 R.P.M. complete with forced sight feed lubrication, low tension magneto and batteries. NEW—Special Cash Price.....\$425.00

DIESEL GENERATOR

30 K.V.A. 3 ph., 60 cy., 240 volt, 1800 R.P.M., 8 PF., Fairbanks-Morse direct connected unit—complete.

STEAM GENERATOR

35 K.W. 3 ph., 60 cy., 240 volt, 327 R.P.M., 8 PF., Ridgway direct connected slide valve engine generator unit—complete.
Just a few of many units we have available for immediate shipment—Send for complete stock list Bulletin No. 39.

ROCKFORD POWER MACHINERY CO.
626 Sixth St. Rockford, Illinois

WILL SACRIFICE FOR QUICK SALE

2—1000 K. V. A. Westinghouse Turbine Generators; 6600 volts, 3 phase, 60 cycle; 3600 r. p. m. 150 lbs. pressure; 28" vacuum; complete with direct connected exciters, Le Blanc jet condensers and circulating pumps.

Must be sold and moved within 90 days. Can be inspected any time.
Wire or phone for price.

Nashville Industrial Corp.
Old Hickory, Tennessee

FOR SALE ICE MACHINES

5—25 Tons Excellent Condition With or Without Motors.

Md. Pipe & Steel Corp.,
Ostend & Scott Sts., Baltimore, Md.

BOILERS

High pressure water tube and H R T boilers at unbelievable prices.
We have them in practically every southern state and are scrapping all but the very best. Write us your requirements.

W. M. SMITH & CO.
Box 1709 Birmingham, Ala.

8" GALVANIZED CORRUGATED PIPE

6000 ft. 8" NEW GALVANIZED CORRUGATED pipe in lengths 16 to 20 ft. Suitable for exhaust drains, water systems, sewers, conduits, etc. Have the necessary connecting sleeves. Priced considerably under the market.

1000 ft. 12" NAYLOR Black asphalted spiral welded slip joint pipe, slightly used.

MARINE METAL & SUPPLY CO.
167 South St., New York City

Second Hand and New PIPE Overhauled and New Threads and Couplings
Wrought Steel PIPE Also Cut to Sketch

Greenpoint Iron & Pipe Co., Inc.
187-205 Maspeth Ave. Brooklyn, N. Y.

10" Water Main at a Bargain

10,000 feet 10" Class B, bell and spigot water main, 12 ft. lengths; good as new and ready for immediate shipment.
Located Southwest Virginia.

Nashville Industrial Corporation
Old Hickory, Tennessee

PIPE—CAST IRON

B&S—AWW standard
3 miles 10" Class "A"
1 mile 10" Class "B"

Excellent used condition.
Attractive price.

DONOH FOUNDRY CO.,
Anniston, Ala.

MONEY IN THE BANK

Unused and unneeded Machinery and Supplies can be turned into Money in the Bank by advertising.

Use the

RESALE DEPARTMENT
of the
Manufacturers Record

Rates on Request



Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

PIPE FOR EVERY PURPOSE

JOS. GREENSPON'S SONS
IRON AND STEEL COMPANY
ST. LOUIS, MO. • TULSA, OKLA. • NEW YORK CITY

PIPE

Rethreaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to 36".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20", and 24".

Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO.
167 South St., New York City

SATISFACTION

ALBERT PIPE SUPPLY CO., INC.

NEW-RECLAIMED-USED

PIPE

ALL SIZES CUT TO SKETCH
AND STOCKED

BERRY & NORTH 13th STS.
BROOKLYN, N.Y.

GUARANTEED

SERVICE

PRICES



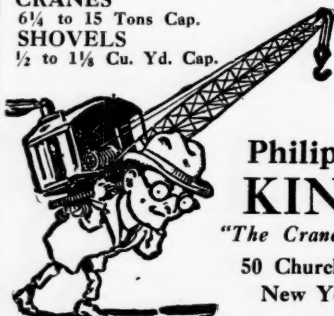
RAILROAD AND CONTRACTORS' EQUIPMENT



BRAND NEW Industrial Brownhoist CRAWLER CRANES & SHOVELS GAS OR STEAM

Fully Guaranteed
**YOU Can Save Thousands
If You Act Promptly!**

CRANES
6 1/4 to 15 Tons Cap.
SHOVELS
1/2 to 1 1/2 Cu. Yd. Cap.



**Philip T.
KING**
"The Crane Man"
50 Church St.,
New York

Derrick and Locomotives FOR SALE

- 1—20 ton Insley Steel Latticed Guy Derrick, 95' mast, 80' boom, 15' bull wheel. 8—1 1/4" guy wires. All Blocks and cables. Complete with 1—9"x10" Lidgerwood double cylinder, 3-drum lifting engine, and 1 Wheland separate swinging engine. Derrick bought new and used one year.
- 3—Baldwin 10-wheel, 77 ton Locomotives, 19"x26", 6 drivers, 8"x10" journals, steam pressure allowed 200 lbs. Complete and in first class condition and ready to go to work. Photograph and specifications furnished on request.
- 1—30 ton Glover Locomotive No. 101416. Built in 1913, standard gauge, 14"x16", 2-6-0 drivers 28" in diameter, 36" centers, tires 2 1/2" thick, steam brakes, all-steel 8-wheel water tender, rebuilt.

T. G. ADAMS MACHINERY CO.
220 W. Bay St., Savannah, Ga.
P. O. Box 1597

CARS & LOCOMOTIVES

- 2—12-ton Plymouth, 36" ga. Gas.
- 1—8-ton Plymouth, 36" ga. Gas.
- 1—8-ton Whitcomb, 36" ga. Gas.
- 30—4 yd. & 5 yd. 36" gauge Dump Cars.

DRAGLINES & PUMPS

- 1—4 yd. Monighan 110' Boom Diesel.
- 1—2 yd. Monighan 70' Boom Diesel.
- 1—1 1/4 yd. Northwest—Gas.
- 3—10-ton Holt Tractors.
- Dragline Buckets, 3/4 yd. to 5 yd.
- 6—2 yd. Lakewood Conc. Dump Buckets.
- Gas & Steam Hoists, 75 to 100 H.P.

R. J. Blackburn, Inc.
8245 Idaho Ave. St. Louis, Mo.

GASOLINE LOCOMOTIVES

For Sale—At fourth price

Three new 8 ton 2 ft. gauge Whitcombs. Can be changed to 36" gauge or 42" gauge. These locomotives are new, unused and are in absolutely splendid condition.

W. M. SMITH & CO.
Birmingham Alabama

FOR SALE

- P. & H. Model 206, 3/4-yd. Dragline.
- Byers, 10-ton Caterpillar Crane, 3/4-yd. Clam.
- O. & S. 22 1/2-ton Loco. Crane 50' Boom.
- 16—12-yd. Western Steel Beam Dump Cars.
- 10—50-ton capy. All Steel Twin Hopper Cars.
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PUT two salesmen out on the firing line and one will send in orders; the other chiefly expense accounts. The amount of their sales will show the difference between the "star" and just another salesman.

The above comparison is just as true of locomotive cranes as it is of men. Every crane will save considerable time and money, but some will do a lot more work than others and with lower expense accounts.

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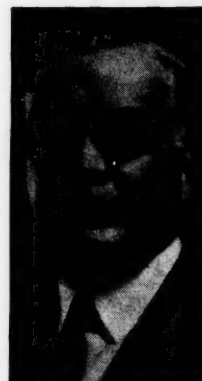
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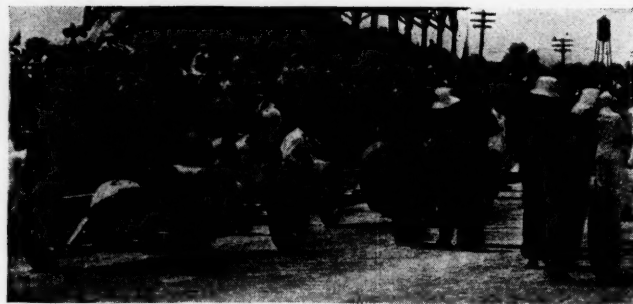
O.K. For Its 20th GREAT RACE

"Not a single brick in the Indianapolis Speedway needs to be changed" says committee of racing experts in report to T. E. Myers, General Manager of this world-famous race course.



MR. T. E. MYERS

AGAIN on Memorial Day, the world's best racing drivers will push their accelerators to the floorboard and speed for 500 miles over this famous brick pavement at Indianapolis.



Above — Scene at the Speedway as the race begins.



Left — Close-up view of the brick surface at Speedway over which the fastest cars have competed for the past 20 years.

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PAVE WITH BRICK



KOEHRING DUMPTOR

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Capacity 5 cubic yards. Three
Speeds, $1\frac{3}{8}$ — $2\frac{1}{2}$ — $3\frac{3}{4}$ m. p. h.

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What a Time-Saver!

IT'S all body—a broad body that makes possible a big heap—above which it's easy to spot a clamshell and it's low enough for use with conveyor type mechanical loader.

Load is **AHEAD** of the driver—he *sees* where he's going — drives to dumping point — load quickly dumps out of wide end — and then he bulldozes the pile—the body is low enough in dumping position! No time-wasting turning on a soft dump — he *backs* out!

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One powerful motor for each multiplane. Simplified construction and either throttle or clutch steering. Full length, broad, strong, special design multiplanes of such low ground pressure that the Dumptor goes where trucks can't go! Koehring *Heavy Duty* construction.

No doubt about the cost-cutting in dirt moving!

Get the full details of this progressive new type of dirt mover which has proved its ability to cut costs on almost every type of job. Write for Special Koehring DUMPTOR circular.

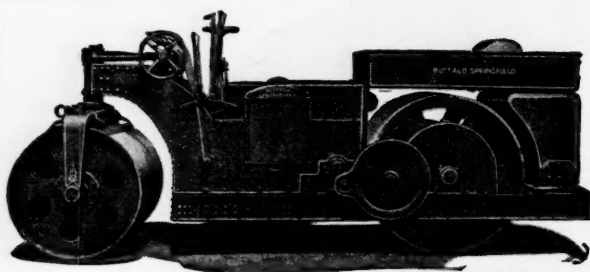
National Equipment Corporation



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Carolina Contractors Equipment & Supply Co., P. O. Box 576, 824 Lady St., Columbia, S. C.; J. L. Hart Machinery Co., So. Florida & Eunice Aves., Tampa, Fla.; The Young & Vann Supply Co., 1725 First Ave., Birmingham, Ala.; Wilson-Weesner-Wilkinson Co., 108 Fatherland St., Nashville, Tenn.; Graham B. Bright, 901 Electric Bldg., Richmond, Va.; D. C. Elphinstone, Inc., 120 S. Calvert St., Baltimore, Md.; I. E. Schilling Co., 125 N. E. Sixth St., Miami, Fla.; W. C. Caye & Co., Division of Wilson-Weesner-Wilkinson Co., 160 Walker St., Atlanta, Ga. A-6237-I

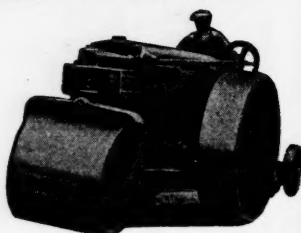
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Which reasons are to be found in the many years of specialized experience back of the men who design and build them—in the up-to-dateness of design of the various models—and in their adaptability to road construction requirements. Steam and motor driven rollers in all practical sizes. Scarifiers and other special attachments optional.

Write for booklet illustrating and describing the Buffalo-Springfield line.



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**Buffalo-Springfield
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Springfield, Ohio

Buffalo-Springfield ROAD ROLLERS

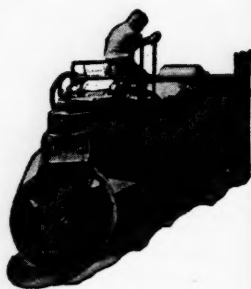
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and a smooth
even pavement"**

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The reason is plain: The ERIE compacts the asphalt uniformly because $\frac{3}{4}$ of the weight of this roller is concentrated over the compression roll.

Roll the job with an ERIE and your margin of profit is larger. Write today for Bulletin "M."

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OLD AND STEADY — SAME HIGH QUALITY

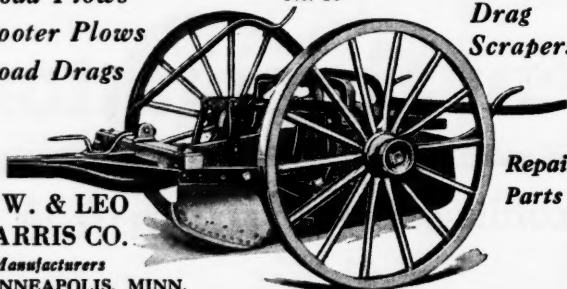
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Soil—climate and ample rainfall are the main contributing factors.

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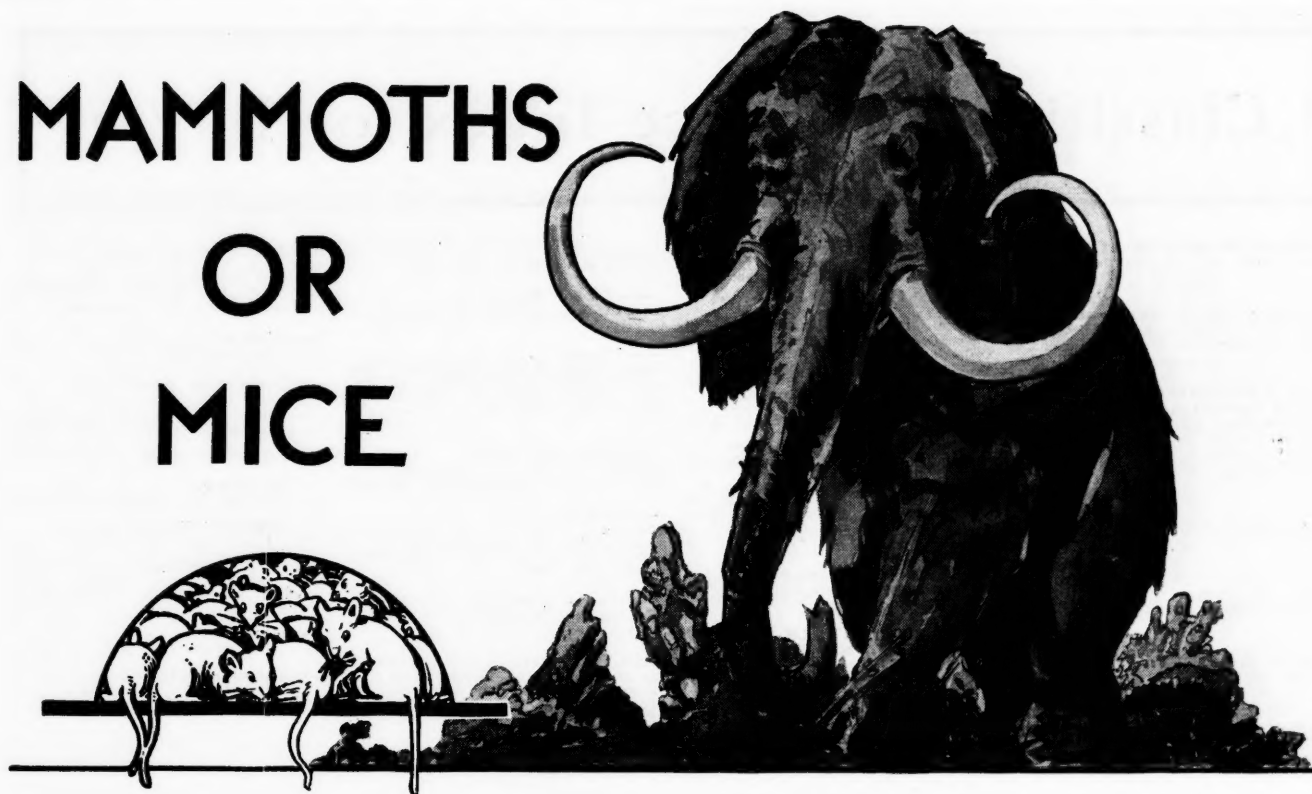
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This is typical of the great variety of commodities offered for shipment by rail, ranging from pins to piling, candy to coal, eggs to elevators, fish to furniture, lumber to livestock, sewing machines to structural steel—everything from "soup to nuts."

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Norfolk and Western facilities include every time and labor-saving device; and practical tests are given to every new suggestion or development. At Norfolk, its port facilities; its huge coal and merchandise piers and warehouses offer all that modern ingenuity has contributed to progress. Norfolk and Western motive power is notably abreast of present requirements—and its operating staff constantly strives for greater efficiency.

So—whether you ship mice or mammoths—make a note now to discuss your shipping requirements with the nearest Norfolk and Western Freight Traffic Department representative.

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Timken Roller Bearing Co., Canton, Ohio.

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—(Scottish Marine.)

Lookout Boiler & Mfg. Co., Chattanooga, Tenn.

—(Used.)

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Randle Machinery Co., The, Cincinnati, O.
Zelicker Supply Co., W. A., St. Louis.

BOILER SETTINGS.

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Harbison-Walker Refractories Co., Pittsburg.

—Tubes.

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National Tube Co., Pittsburgh, Pa.
Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

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BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.
Oliver Iron & Steel Corp., Pittsburgh, Pa.
Progressive Mfg. Co., Torrington, Conn.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.
Ryerson & Sons, Inc., Jos. T., St. Louis and New York.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.

Hanchett Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Nelson & Co., John, Chicago, Ill.
Provident Savings Bank and Trust Co., Cincinnati, Ohio.

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Kennedy-Riesger Drilling Co., New York City.
McClintic-Marshall Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Henwood, Inc., Scranton, Pa.

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Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Roanoke Iron & Bridge Works, Roanoke, Va.
Virginia Bridge & Iron Co., Roanoke, Va.

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Michels Art Bronze Co., Covington, Ky.

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BUCKETS (Clam Shell.)

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Industrial Brownholt Corp., Cleveland, O.
Owen Bucket Co., The, Cleveland, Ohio.
Williams Company, G. H., Erie, Pa.

—(Coal.)

Owen Bucket Co., Cleveland, O.

—(Dredging, Excavating, Sewer, etc.)

Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.
Williams Company, G. H., Erie, Pa.

—(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.

—(Material Handling.)

Owen Bucket Co., Cleveland, O.

—(Ore Handling.)

Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Rehandling.)

Owen Bucket Co., Cleveland, O.

—(Sand and Gravel.)

Owen Bucket Co., Cleveland, O.
Williams Company, G. H., Erie, Pa.

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Moyer Co., Tighman, Allentown, Pa.
Thompson & Bros., T. C., Charlotte, N. C.
United Engineers & Constructors, Phila.
White Engineering Corp., J. G., New York

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Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Truscon Steel Co., Youngstown, O.
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—(Portable Sheet Metal.)

Birmingham Tank Co., Birmingham.

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Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.

Trackson Co., Milwaukee, Wis.

BURLAP.

Fulton Bag & Cotton Mills, Atlanta, Ga.

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Roehling's Sons Co., John A., Trenton, N. J.

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Woodhouse Chain Works, Trenton, N. J.

—and Wire (Electric.)

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Western Electric Co., New York City.

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CAN and Box-Making Machinery (Tin.)

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Robins & Co., A. E., Baltimore, Md.

CANVAS.

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Southern Iron & Equipment Co., Atlanta.

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Irving Iron Works, Co., Long Island City, N. Y.

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—(Gray Iron.)Fuller Lehigh Co., Fullerton, Penna.
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Jefferson Foundry Co., Birmingham, Ala.
National Cast Iron Pipe Co., Birmingham, Ala.
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Salem Fdry. & Mch. Wks., Salem, Va.
Savannah Mch. & Fdry. Co., Savannah, Ga.
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Harbison-Walker Refractories Co., Pittsburg.

—Guns.

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Traylor Engr. & Mfg. Co., Allentown, Pa.

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Broehling & Robertson, Inc., Richmond, Va.

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Lansing Co., Lansing, Mich.**—Pipe Machinery (See Pipe Machinery, Concrete.)****—Placing Equipment.**

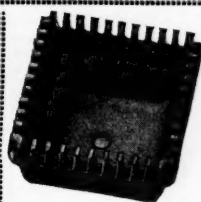
National Equipment Corp. (Inley Division), Milwaukee, Wis.

—Roofing Tile.

Federal-American Cement Tile Co., Chicago.

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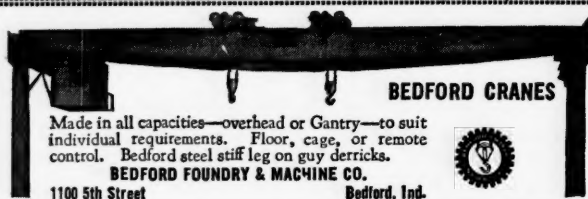
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Thew Shovel Co., The, Lorain, Ohio.

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Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

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Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

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—(Machinery (Generators, Motors, etc., Used.)
Delta Equipment Co., Philadelphia, Pa.
Electric Service Co., Cincinnati, Ohio.
General Electric Co., Schenectady, N. Y.
O'Brien Machinery Co., The, Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Rockford Power Mch. Co., Rockford, Ill.

—(Machinery Repairing (Motors, Generators, etc.)
Electric Service Co., Cincinnati, Ohio.

ELECTRIC LIGHTING.
Westinghouse Lamp Co., New York City

ELECTRIC SHOVELS (See Shovels.)

ELEVATORS (Electric.)
American Elevator & Machine Co., Inc., Louisville, Ky.
Miller Co., St. Louis, Mo.

—(Hand and Belt Power.)
American Elevator & Machine Co., Inc., Louisville, Ky.
Miller Co., St. Louis, Mo.

—(Hydraulic.)
American Elevator & Machine Co., Inc., Louisville, Ky.

ENGINEERS (Airports.)
Lockwood Greene Engrs., Inc., New York.
MacElwee & Crandall, Inc., Cambridge, Mass.
Shaw Co., Russell B., St. Louis, Mo.

—(Appraisal.)
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
May, Inc., Geo. S., Chicago, Ill.
Sanderson & Porter, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singleton, Inc., Atlanta.

—(Aviation.)
Shaw Co., Russell B., St. Louis, Mo.

—(Bridge.)
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hardaway Contracting Co., Columbus, Ga.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Southern Erectors, Inc., Tampa, Fla.
Steel & Lobby, Knoxville, Tenn.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.
Wheeler, Walter H., Minneapolis, Minn.
Whitman, Requaardt & Smith, Balto., Md.

—(Chemical.)
Barrow-Agee Laboratories, Memphis, Tenn.
Dow & Smith, New York, N. Y.
Moss, Jr., W. Wade, Columbus, Ga.
Picard Laboratories, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.

—(Civil.)
Charlton & Davis, Ft. Lauderdale, Fla.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Hills Co., George B., Jacksonville, Fla.
Huey, S. B., Monroe, La.
MacElwee & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Steel & Lobby, Knoxville, Tenn.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.

—(Consulting.)
Barstow & Co., W. S., New York City.
Charlton & Davis, Ft. Lauderdale, Fla.
Converse & Co., J. B., Mobile, Ala.
Cramer, Robert, Milwaukee, Wis.
Engineering Service Corp., Houston, Tex.
Goder, Joseph, Chicago, Ill.
Harns Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Smith, Elroy G., Augusta, Ga.
Stillman & Van Sien, New York, N. Y.
United Engineers & Constructors, Phila.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.

—(Cost.)
Ernst & Ernst, New York City.
May, Inc., Geo. S., Chicago, Ill.

—(Dams.)
Alpaugh & Sons, Chas. W., Manassas, Va.
Barstow & Co., W. S., New York City.
Byllesby Engineering & Management Corp., Chicago, Ill.
Gardner & Howe, Memphis, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Harns Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sirrline & Co., J. E., Greenville, S. C.
Tucker & Lorton, Charlotte, N. C.
Wheeler, Walter H., Minneapolis, Minn.
White Engineering Corp., J. G., New York.

—(Drainage and Irrigation.)
Cramer, Robert, Milwaukee, Wis.
Hills Co., George B., Jacksonville, Fla.
Huey, S. E., Monroe, La.

—(Efficiency.)
Ernst & Ernst, New York, N. Y.
Whitman, Requaardt & Smith, Balto., Md.

—(Electrical.)
Engineering Service Corp., Houston, Tex.
Hoosier Engineering Co., Chicago, Ill.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Tucker & Lorton, Charlotte, N. C.
Webb Electric Co., Anderson, S. C.
White Co., Gilbert C., Durham, N. C.
Wiley & Wilson, Lynchburg, Va.

—(Electric-Light and Power Plants.)
Barstow & Co., W. S., New York City.
Byllesby Engineering & Management Corp., Chicago, Ill.
Cramer, Robert, Milwaukee, Wis.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Philadelphia.
Tucker & Lorton, Charlotte, N. C.

White Engineering Corp., J. G., New York.
White Co., Gilbert C., Durham, N. C.

—(Flood Control.)
Harns Engineering Co., Chicago.

—(Gas.)
Byllesby Engineering and Management Corp., Chicago, Ill.
Huey, S. E., Monroe, La.

—(Geological.)
De Kalb, Courtenay, New York City.
Froehling & Robertson, Richmond, Va.
Moss, Jr., W. Wade, Columbus, Ga.
Wadleigh & Bailey, Washington, D. C.

—(Harbor Improvements.)
Engineering Service Corp., Houston, Tex.

—(Heating.)
Wiley & Wilson, Lynchburg, Va.

—(Hydraulic.)
Alpaugh & Sons, Chas. W., Manassas, Va.
Harns Engineering Co., Chicago.
Main, Inc., Chas. T., Boston, Mass.
Whitman, Requaardt & Smith, Balto., Md.

—(Hydro-electric.)
Alpaugh & Sons, Chas. W., Manassas, Va.
Barstow & Co., W. S., New York City.
Byllesby Engineering & Management Corp., Chicago, Ill.
Harns Engineering Co., Chicago.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Philadelphia.
Sirrline & Co., J. E., Greenville, S. C.
Tucker & Lorton, Charlotte, N. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.

—(Ice and Refrigerating.)
Engineering Service Corp., Houston, Tex.

—(Industrial Plants.)
Barstow & Co., W. S., New York City.
Consoer, Older & Quinlan, Inc., Chicago.
Converse & Co., J. B., Mobile, Ala.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hills Co., George B., Jacksonville, Fla.
Lockwood Greene Engrs., Inc., New York.
MacElwee & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Prescher & Co., Inc., G. Lloyd, Atlanta.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Philadelphia.
Sirrline & Co., J. E., Greenville, S. C.
Smith, Elroy G., Augusta, Ga.
Turner, C. A. P., Minneapolis, Minn.
United Engineers & Constructors, Phila.

—(Industrial Survey.)
Converse & Co., J. B., Mobile, Ala.
Lockwood Greene Engrs., Inc., New York.
Wadleigh & Bailey, Washington, D. C.

—(Inspection and Tests.)
Barrow-Agee Laboratories, Memphis, Tenn.
Conard, William E., Burlington, N. J.
Cramer, Robert, Milwaukee, Wis.
Dow & Smith, New York, N. Y.
Froehling & Robertson, Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Moss, Jr., W. Wade, Columbus, Ga.
Picard Laboratories, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southwestern Laboratories, Ft. Worth, Tex.

—(Lighting.)
Byllesby Engineering & Management Corp., Chicago, Ill.
Westinghouse Lamp Co., New York City.
Wiley & Wilson, Lynchburg, Va.

—(Mechanical.)
Charlton & Davis, Ft. Lauderdale, Fla.
Engineering Service Corp., Houston, Tex.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engr., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Meigs, Bassett & Slaughter, Phila., Pa.
Sanderson & Porter, New York, N. Y.
Wiley & Wilson, Lynchburg, Va.

—(Mining. See Engineers, Geological.)

—(Municipal.)
Consoer, Older & Quinlan, Inc., Chicago.
Dow & Smith, New York, N. Y.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Huey, S. E., Monroe, La.
Knowles, Inc., Morris, Pittsburgh, Pa.
McCrary Co., The, J. B., Atlanta, Ga.
White Co., Gilbert C., Durham, N. C.

—(Paving and Roads.)
Dow & Smith, New York, N. Y.
Freeland, Roberts & Co., Nashville, Tenn.

Sure Footing!

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CENTRAL "KNOBBY" NON-SKID FLOOR PLATES

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—Production.

Scotfield Engineering Co., Philadelphia.

—(Public Service Properties.)

Barstow & Co., W. S., New York City.
Byllesby Engineering & Management Corp., Chicago, Ill.
Knowles, Inc., Morris, Pittsburgh, Pa.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scotfield Engineering Co., Philadelphia.
White Engineering Corp., J. G., New York.

—(Railroad.)

Huey, S. E., Monroe, La.

—(Reinforced Concrete Bridges, Buildings, etc.)

Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Hows, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Steel & Lobby, Knoxville, Tenn.
Tucker & Lorton, Charlotte, N. C.
Turner, C. A. P., Minneapolis, Minn.
Wheeler, Walter H., Minneapolis, Minn.

—(Sales Analysis.)

May, Inc., Geo. S., Chicago, Ill.

—(Sanitary.)

Cramer, Robert, Milwaukee, Wis.
Harza Engineering Co., Chicago.
Whitman, Requaardt & Smith, Balto., Md.

—(Sewage Disposal Plants.)

Cramer, Robert, Milwaukee, Wis.
McCrary Co., The, J. B., Atlanta, Ga.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singleton, Inc., Atlanta.

—(Sewerage and Waterworks.)

Conard, William B., Burlington, N. J.
Conover, Older & Quinlan, Inc., Chicago.
Hardaway Contracting Co., Columbus, Ga.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Knowles, Inc., Morris, Pittsburgh, Pa.
Sanderson & Porter, New York, N. Y.
Tucker & Lorton, Charlotte, N. C.
White Co., Gilbert C., Durham, N. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.

—(Structural.)

Freeland, Roberts & Co., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs Nat'l Park, Ark.
Hills Company, Geo. B., Jacksonville, Fla.
Huey, S. E., Monroe, La.
Lockwood Greene Engrs., Inc., New York.
Southern Erectors, Inc., Tampa, Fla.
Turner, C. A. P., Minneapolis, Minn.
United Engineers & Constructors, Phila.
Virginia Bridge & Iron Co., Roanoke, Va.
Whitman, Requaardt & Smith, Balto., Md.

—(Textile Mills.)

Lockwood Greene, Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sirsine & Co., J. E., Greenville, S. C.

—(Transmission Lines.)

Hoosier Engineering Co., Chicago, Ill.

—(Ventilating and Heating.)

Wiley & Wilson, Lynchburg, Va.

—(Water Supply.)

Whitman, Requaardt & Smith, Balto., Md.

ENGINES (Compressed Air.)

Dake Engine Co., Grand Haven, Mich.

—(Diesel Type.)

Fairbanks, Morse & Co., Chicago, Ill.

—(Gas and Gasoline.)

Sterling Engine Co., Buffalo, N. Y.

—(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

—(Oil.)

Continental Gin Co., Birmingham, Ala.

—(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Lombard Iron Works & Supply Co., Augusta, Ga.
Schofield's Sons Co., J. S., Macon, Ga.

—(Printing and Newspaper Plants.)

Lockwood Greene Engrs., Inc., New York.

—Production.

Scotfield Engineering Co., Philadelphia.

—(Public Service Properties.)

Barstow & Co., W. S., New York City.
Byllesby Engineering & Management Corp., Chicago, Ill.
Knowles, Inc., Morris, Pittsburgh, Pa.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scotfield Engineering Co., Philadelphia.
White Engineering Corp., J. G., New York.

—(Railroad.)

Huey, S. E., Monroe, La.

—(Reinforced Concrete Bridges, Buildings, etc.)

Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Hows, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Steel & Lobby, Knoxville, Tenn.
Tucker & Lorton, Charlotte, N. C.
Turner, C. A. P., Minneapolis, Minn.
Wheeler, Walter H., Minneapolis, Minn.

—(Sales Analysis.)

May, Inc., Geo. S., Chicago, Ill.

—(Sanitary.)

Cramer, Robert, Milwaukee, Wis.
Harza Engineering Co., Chicago.
Whitman, Requaardt & Smith, Balto., Md.

—(Sewage Disposal Plants.)

Cramer, Robert, Milwaukee, Wis.
McCrary Co., The, J. B., Atlanta, Ga.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singleton, Inc., Atlanta.

—(Sewerage and Waterworks.)

Conard, William B., Burlington, N. J.
Conover, Older & Quinlan, Inc., Chicago.
Hardaway Contracting Co., Columbus, Ga.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Knowles, Inc., Morris, Pittsburgh, Pa.
Sanderson & Porter, New York, N. Y.
Tucker & Lorton, Charlotte, N. C.
White Co., Gilbert C., Durham, N. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.

—(Structural.)

Freeland, Roberts & Co., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs Nat'l Park, Ark.
Hills Company, Geo. B., Jacksonville, Fla.
Huey, S. E., Monroe, La.
Lockwood Greene Engrs., Inc., New York.
Southern Erectors, Inc., Tampa, Fla.
Turner, C. A. P., Minneapolis, Minn.
United Engineers & Constructors, Phila.
Virginia Bridge & Iron Co., Roanoke, Va.
Whitman, Requaardt & Smith, Balto., Md.

—(Textile Mills.)

Lockwood Greene, Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sirsine & Co., J. E., Greenville, S. C.

—(Transmission Lines.)

Hoosier Engineering Co., Chicago, Ill.

—(Ventilating and Heating.)

Wiley & Wilson, Lynchburg, Va.

—(Water Supply.)

Whitman, Requaardt & Smith, Balto., Md.

ENGINES (Compressed Air.)

Dake Engine Co., Grand Haven, Mich.

—(Diesel Type.)

Fairbanks, Morse & Co., Chicago, Ill.

—(Gas and Gasoline.)

Sterling Engine Co., Buffalo, N. Y.

—(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

—(Oil.)

Continental Gin Co., Birmingham, Ala.

—(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

ENVELOPES.

Young & Selden Co., Baltimore, Md.

ESTIMATORS (Building & Construction.)

Martin, Joe B., Charlotte, N. C.

EXCAVATING MACHINERY.

Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., So., Milwaukee, Wis.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland.
National Equipment Corp. (Kochring, Insley, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

EXCAVATORS (Clamshell and Orange Peel.)

Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., Lorain, Ohio.

—(Dragline. See Dragline Excavators.)

—(Trench.)

Barber-Greene Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Buckeye Traction Ditcher Co., Findlay, Ohio.
Bucyrus-Erie Co., So., Milwaukee, Wis.
Harnischfeger Corp., Milwaukee, Wis.
Ohio Power Shovel Co., Lima, Ohio.

EXPANSION JOINTS (Road and Street.)

Carey Co., Philip, Lockland, Cincinnati, Ohio.

EXPLOSIVES.

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

FACTORY Management Systems.

Ernst & Ernst, New York, N. Y.

FEED-WATER HEATERS and Purifiers.

American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill.

FENCE POSTS (Crescoted.)

American Crescoting Co., Louisville, Ky.
Ayer & Lord Tie Co., Chicago, Ill.

FENCING Entrance Gates (Iron, Steel and Wire.)

American Steel and Wire Co., Balto., Md.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.

—(Field and Industrial, Wire Woven.)

American Steel and Wire Co., Balto., Md.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.

FERTILIZER MACHINERY.

Raymond Bros., Impact Pair, Co., Chicago.

FILTER (For Domestic and Industrial Purposes.)

American Water Softener Co., Phila., Pa.
Bacharach & Co., E. W., Kansas City, Mo.
International Filter Co., Chicago, Ill.
Roberts Filter Mfg. Co., Darby (Phila.), Pa.

—Cloth.

Newark Wire Cloth Co., Newark, N. J.

FINANCING.

Electric Bond & Share Co., New York.
Gay & Co., W. O., New York, N. Y.

FIREPROOF Building Material.

Bannon Pipe Co., Louisville, Ky.

—Doors and Shutters.

Wilson Corp., The J. G., New York City.

FITTINGS (Wire Rope.)American Steel & Wire Co., Chicago, Ill.
Roebbing's Sons Co., John A., Trenton, N. J.**FLANGES (Iron and Steel.)**Amer. Cast Iron Pipe Co., Birmingham
Dart Mfg. Co., E. M., Providence, R. I.
National Cast Iron Pipe Co., Birmingham, Ala.
Taylor Forge & Pipe Wks., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.**—(Swivel.)**

Merco Nordstrom Valve Company, San Francisco, Cal.

—and Flanged Fittings.

Grinnell Co., Inc., Providence, R. I.

FLOOR (Asphalt Mastic.)

Barber Asphalt Co., Philadelphia, Pa.

—(Cork Composition.)

Congoleum-Nairn, Inc., Kearny, N. J.

—(Hardwood, Maple, Oak.)

Kirby Lumber Co., Houston, Tex.

—(Linoleum.)

Congoleum-Nairn, Inc., Kearny, N. J.

—(Northern Hard Maple.)

Helt Hardwood Co., Oconto, Wis.

—(Open Steel.)Blaw-Knox Co., Pittsburgh, Pa.
Irving Iron Works Co., Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.**—Covering.**

Congoleum-Nairn, Inc., Kearny, N. J.

—Hardner (Concrete.)

Sonneborn Sons, Inc., L., New York.

—Plates and Stair Treads.

Central Iron & Steel Co., Harrisburg, Pa.

—Steel (For Concrete Culverts, Roads, Streets.)

Blaw-Knox Co., Pittsburgh, Pa.

—Wax.

Congoleum-Nairn, Inc., Kearny, N. J.

FLUSH-TANK SIPHONS.

Pacific Flush-Tank Co., New York, N. Y.

FORMED PRODUCTS (Roofing.)

American Rolling Mill Co., Middletown.

FORMS, Steel (For Concrete Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)

Blaw-Knox Co., Pittsburgh, Pa.

FOUNDRIES and Machine Shops.Deemer Steel Casting Co., New Castle, Del.
General Machine Works, York, Pa.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
Goldens' Fdry. & Mch. Co., Columbus, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Mountain State Steel Foundries, Parkersburg, W. Va.
Richmond Foundry & Mfg. Co., Richmond, Va.**FOUNDRY Equipment and Supplies.**

Hill & Griffith Co., Cincinnati, O.

—Facings (Talc and Soapstone.)

Hill & Griffith Co., Cincinnati, O.

FURNACES (Industrial.)

Combustion Engr. Corp., New York City.

—(Water-Cooled.)Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.**GALVANIZED Products.**Bessemer Galvanizing Works, Birmingham, Ala.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.**—Steel and Iron.**American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill.**GALVANIZING (Cadmium Plating.)**

Birmingham Galvanizing Co., Birmingham, Ala.

—(Hot Dip.)Bessemer Galvanizing Works, Birmingham.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
Newport News Shipbuilding & Drydock Co., Newport News, Va.**GAS HOLDERS.**Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.**—Producers.**Gas-O-Flame Stove Works, Port Deposit, Md.
Wood & Co., E. D., Philadelphia, Pa.**GASOLINE and KEROSENE.**

Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)**GEARS.**DeLaval Steam Turbine Co., Trenton, N. J.
Earle Gear & Machine Co., Phila., Pa.
General Electric Co., Schenectady, N. Y.**—(Worm Reduction.)**

DeLaval Steam Turbine Co., Trenton, N. J.

GENERATORS, MOTORS (New.)General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.**—(Used.)**O'Brien Machinery Co., Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.**GEOLOGISTS. (See Engineers. Geological.)****GLASS (Art.)**

Hires Turner Glass Co., Philadelphia, Pa.

—(Plate.)Hires Turner Glass Co., Philadelphia, Pa.
Southwestern Sheet Glass Co., Okmulgee, Okla.**—(Window.)**Hires Turner Glass Co., Philadelphia, Pa.
Pittsburgh Plate Glass Co., Pittsburgh.
Southwestern Sheet Glass Co., Okmulgee, Okla.**—(Wire.)**Hires Turner Glass Co., Philadelphia, Pa.
Southwestern Sheet Glass Co., Okmulgee, Okla.**GRADERS (Elevating.)**Adams Co., J. D., Indianapolis, Ind.
Caterpillar Tractor Co., Peoria, Ill.**—(One Man Motor.)**

Adams Co., J. D., Indianapolis, Ind.

—(Leaning Wheel Road.)

Adams Co., J. D., Indianapolis, Ind.

GRAPHITE.

Dixon Crucible Co., Jos., Jersey City, N. J.

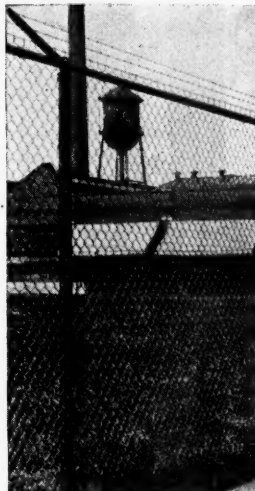
GRATES and Grate Bars.

Schodfeld's Sons Co., J. S., Macon, Ga.

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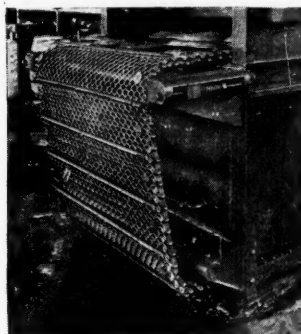
Cyclone Products

Every one of these Cyclone Products is designed to serve a special purpose in your business. They reduce overhead in many ways. Look them over and see how they can help you in your economy program.



Cyclone Fence

Cyclone Fence is actually operating equipment. It protects your property, eliminates losses and thereby reduces overhead expenses. Accurate estimates furnished without obligation. Our trained men install your fence. Get Cyclone prices before you buy.



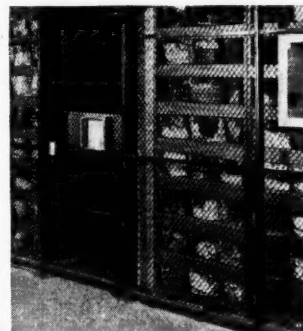
Cyclone Chain Link Conveyors

Operate on pulleys and drums like other belt conveyors. Widely used for conveying fruits, metal parts, etc. Made in several meshes and gauges of wire. Galvanized, brass, Monel and Nichrome wire. Write for information.

Catch-All Baskets



Keep your plant tidy. Burn rubbish without danger of fire. Practical for dozens of industrial uses. Write for details.

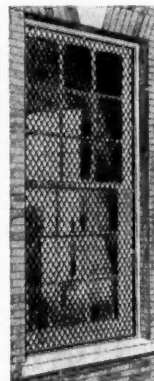


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Poe Piping & Heating Co., Greenville, S. C.

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Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Gasoline.)
Dake Engine Co., Grand Haven, Mich.
National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Steam.)
Dake Engine Co., Grand Haven, Mich.
Street Bros. Mch. Wks., Chattanooga, Tenn.

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Myers & Bro. Co., The, F. E., Ashland, O.
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Patent Scaffolding Co., Chicago, Ill.

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Porter Co., H. K., Pittsburgh, Pa.

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Porter Co., H. K., Pittsburgh, Pa.
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Dixon Crucible Co., Jos., Jersey City, N. J.
Gulf Refining Co., Pittsburgh, Pa.

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Lunkenheimer Co., The, Cincinnati, O.

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Kirby Lumber Co., Houston, Texas.

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Amer. Creosoting Co., Inc., Louisville, Ky.
Atlantic Creosoting Co., Norfolk, Va.
Ayer & Lord Tis Co., Inc., Chicago.
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General Machine Works, York, Pa.

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Electric Service Co., Cincinnati, Ohio.
Marine Metal & Supply Co., New York.
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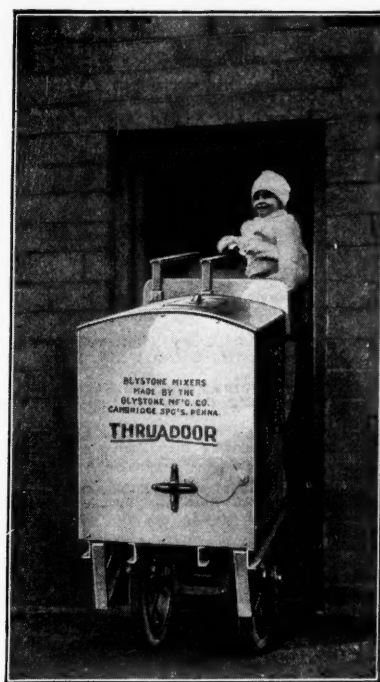
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Greenspoint's Sons Iron & Steel Co., St. Louis, Mo.
Hudson Pipe & Supply Co., Bayonne, N. J.
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Cast Iron Pipe Research Assn., Chicago.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
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—(Spiral Welded.)

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—(Steel.)

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Chicago Bridge & Iron Wks., Birmingham.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.
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—Unions and Joints.

Dart Mfg. Co., E. M., Providence, R. I.

—Systems (Industrial.)

Grinnell Co., Inc., Providence, R. I.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.
Southern Automatic Sprinkler Company, Birmingham.

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Carnegie Steel Co., Pittsburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Granite City Steel Co., Granite City, Ill.
Gulf States Steel Co., Birmingham, Ala.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham.

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Atlantic Crescoting Co., Norfolk, Va.
Ayer & Lord Tie Co., Inc., Chicago.
Brown Wood Preserving Co., Louisville, Ky.

—(Tabular, Steel.)

Bessemer Galvanizing Works, Birmingham, Ala.
National Tube Co., Pittsburgh, Pa.

—(Yellow Pine.)

Jackson Lumber Co., Lookhart, Ala.

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Combustion Engr. Corp., New York City

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Ripley Foundry & Machine Co., Ripley, O.
Tomlin-Harris Machine Co., Cordoba, Ga.

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Gas-O-Flame Stove Wks., Port Deposit, Md.
Wood & Co., E. D., Phila., Pa.

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—Shafting and Hangers.

Goldens' Fdry. & Mch. Co., Columbus, Ga.

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Myers & Bro. Co., The F. E., Ashland, O.
National Equipment Corp., (C. H. & E. Division), Milwaukee, Wis.
Petersburg Mchry. Pump & Well Co., Petersburg, Va.
Virginia Mchry. & Well Co., Richmond, Va.

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—(Boiler Feed.)

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Myers & Bro. Co., The F. E., Ashland, O.

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Allis-Chalmers Mfg. Co., Milwaukee, Wis.
American Well Works, Aurora, Ill.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
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La Bour Co., Elkhart, Ind.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.

—(Contractors.)

Erie Pump & Engine Wks., Medina, N. Y.

—(Deep Well.)

American Well Works, Aurora, Ill.
Cook, Inc., A. D., Lawrenceburg, Ind.
Layne & Bowler, Inc., Memphis, Tenn.

—(Hydraulic.)

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

—(Power.)

American Well Works, Aurora, Ill.
Sterling Engine Co., Buffalo, N. Y.

—(Pulverized Coal.)

Fuller Lehigh Co., Fullerton, Pa.

—(Sand and Dredging.)

Erie Pump & Engine Wks., Medina, N. Y.
Georgia Iron Works, Augusta, Ga.

—(Steam.)

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Fairbanks, Morse & Co., Chicago, Ill.

—(Water Works.)

American Well Works, Aurora, Ill.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.

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Pipe Railing Constr. Co., Long Island City, N. Y.

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Smith & Co., W. M., Birmingham, Ala.
Southern Iron and Equip. Co., Atlanta.
Zelicker Supply Co., W. A., St. Louis.

—(Frogs and Switches.)

Bethlehem Steel Co., Bethlehem, Pa.
Robinson & Orr, Pittsburgh, Pa.

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Central of Georgia Rwy., Savannah, Ga.
Missouri-Kansas-Texas Lines, Dallas, Tex.
Model Land Company, Flagler System, St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Tennessee Central Railway, Nashville.

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Hyman-Michaels Co., Chicago, Ill.
Levis & Co., Henry, Philadelphia, Pa.
Perry, Buxton, Doane Co., Philadelphia.
Robinson & Orr, Pittsburgh, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron & Equip. Co., Atlanta, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Zelicker Supply Co., W. A., St. Louis.

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—(Marine.)

Charleston Dry Dock and Machine Co., Charleston, S. C.

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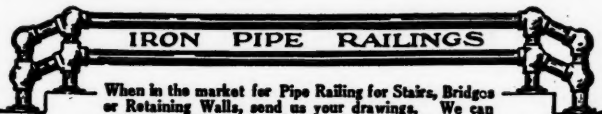
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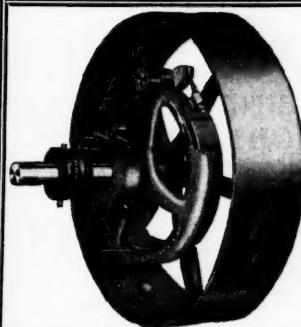
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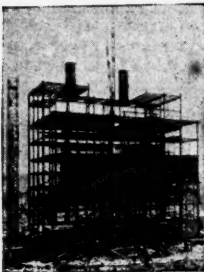
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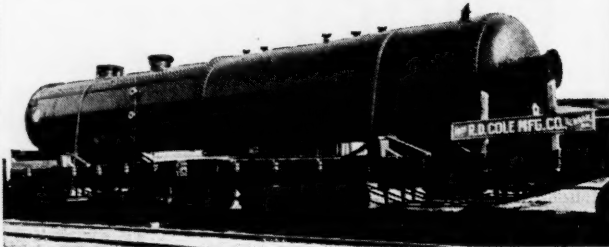
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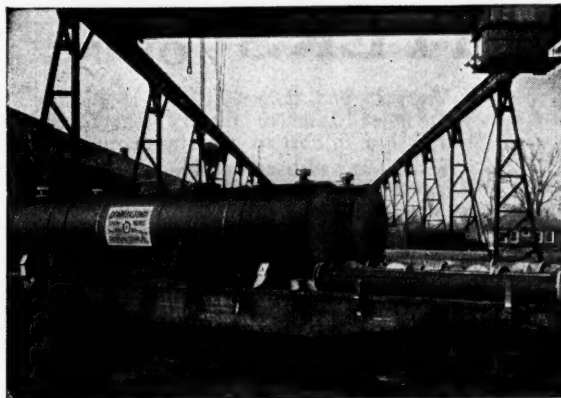
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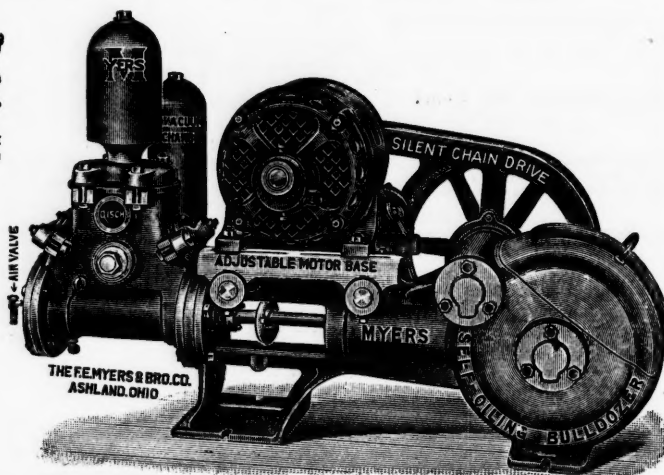
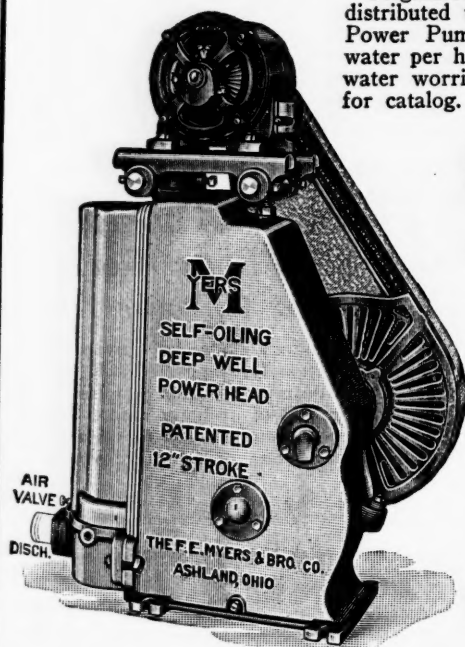
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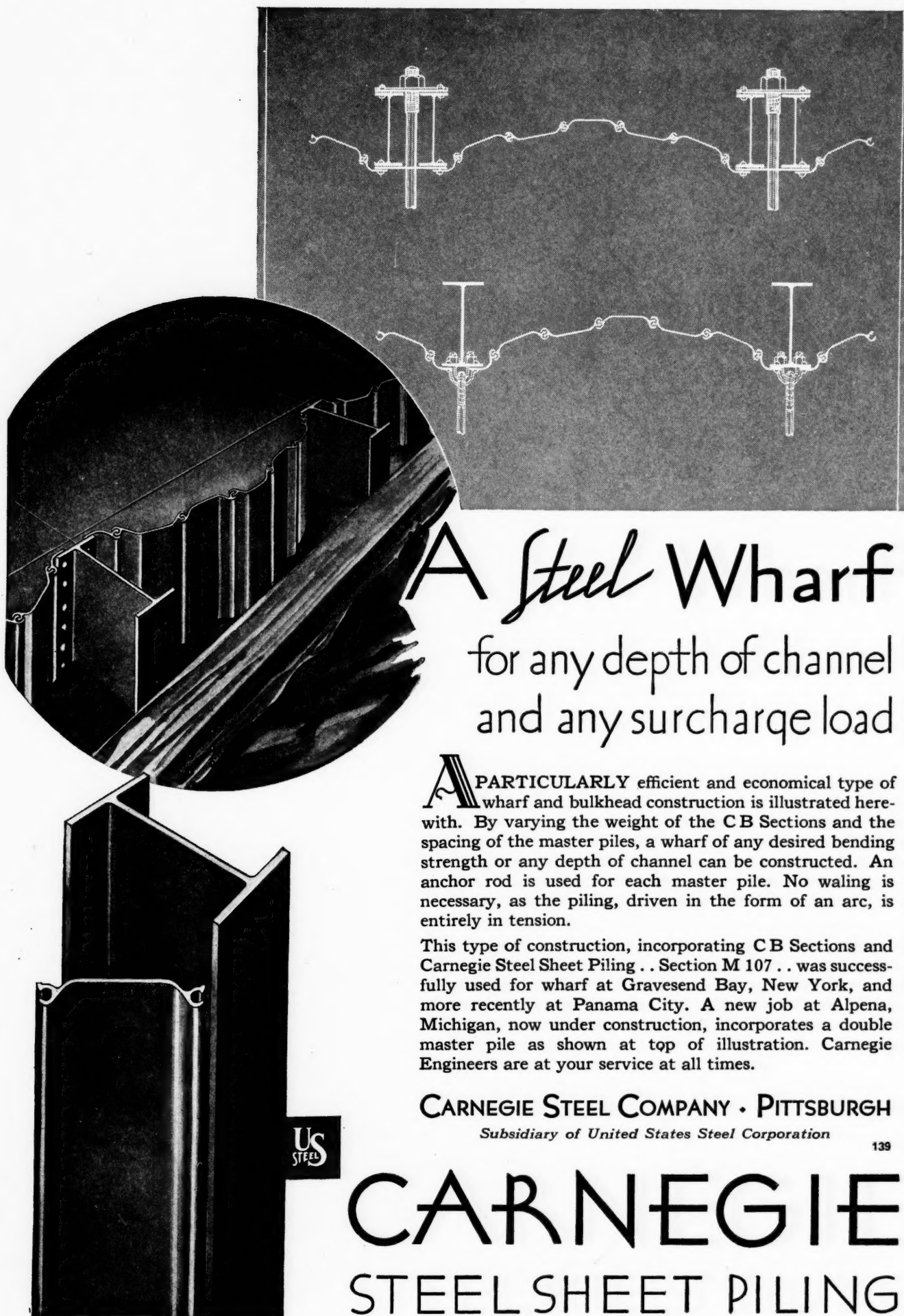
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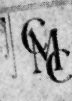
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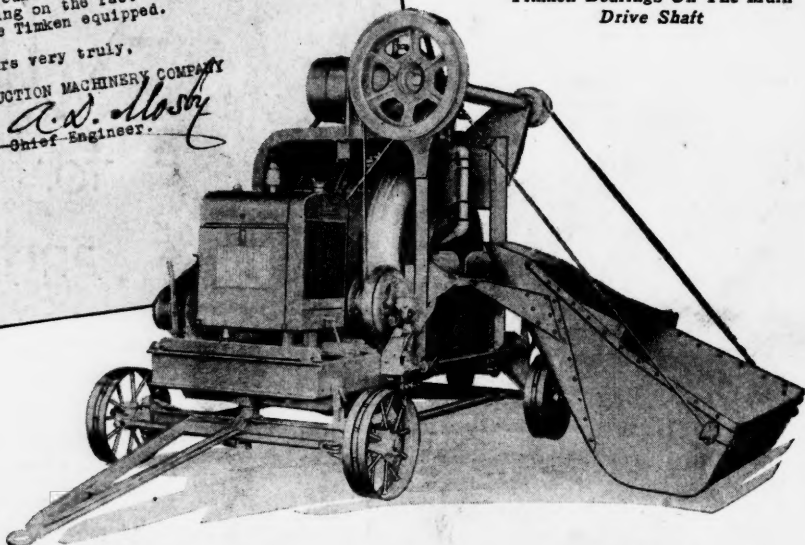
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A. D. Mosby
Chief Engineer.



C. M. C. "Master" 14 Concrete Mixer Equipped With Timken Bearings On The Drum Rollers, Hoist Drum For Power Loader And Reduction Gear, And Dodge-Timken Bearings On The Main Drive Shaft



Tried Other Bearings - Then Standardized On Timkens

The contents of the above letter are of immediate significance to every prospective buyer of concrete mixing equipment.

No better proof of the superiority of Timken tapered construction, Timken positively aligned rolls and Timken-made steel could be forthcoming than the fact that, after experience with other

types of bearings, the Construction Machinery Company standardized on Timkens.

Leading builders of all types of construction machinery have found that no other type of anti-friction bearing so completely meets all requirements in this notoriously punishing service. Specify "Timken Bearing Equipped."

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

